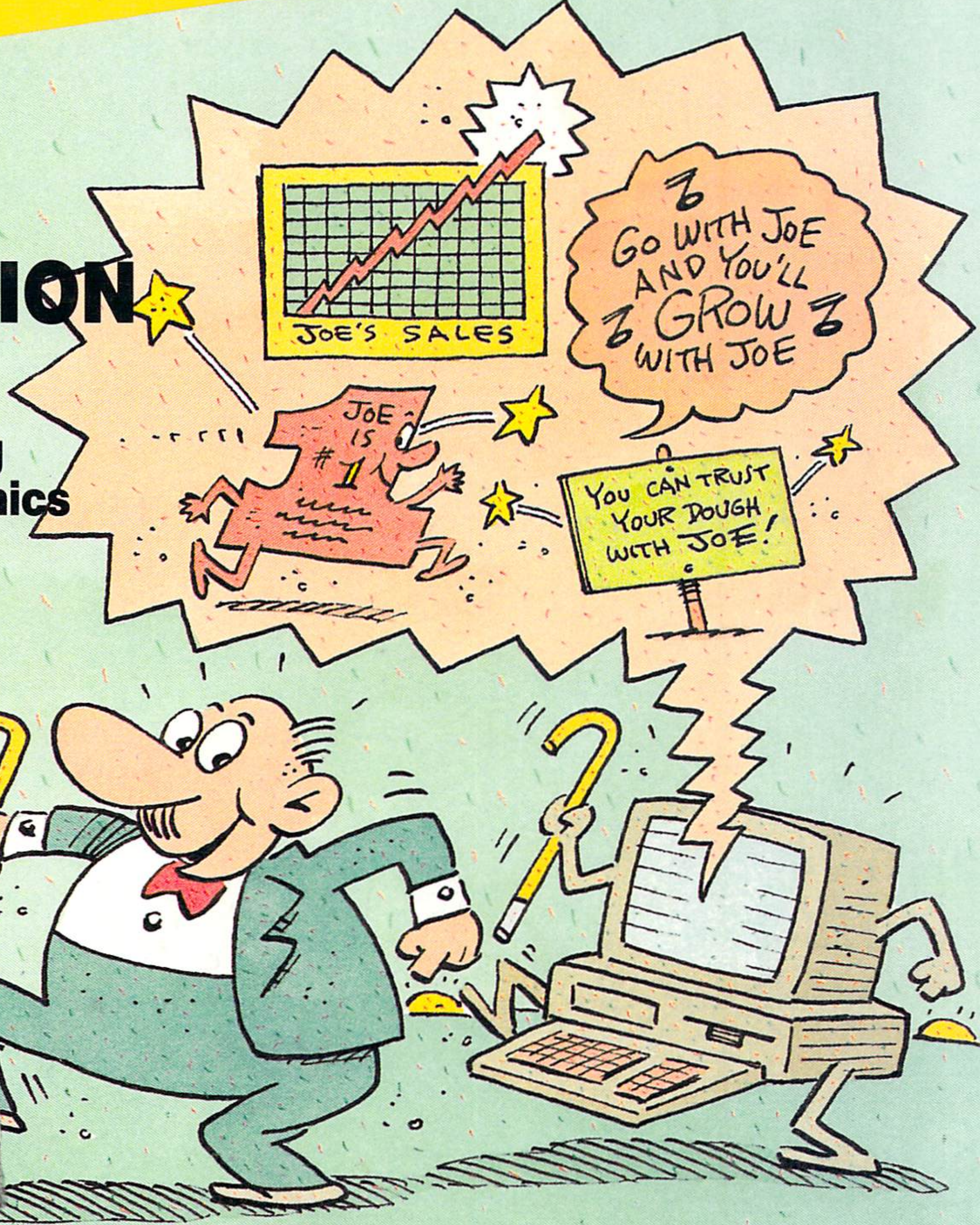
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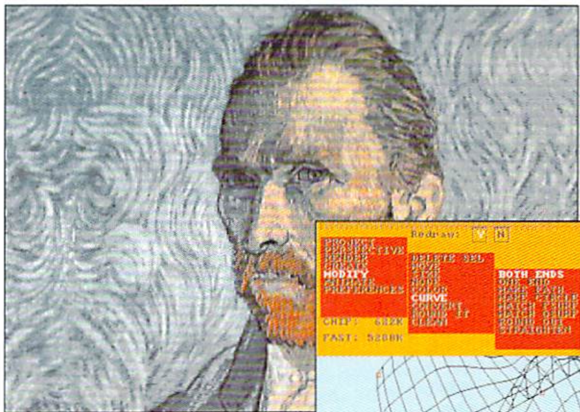
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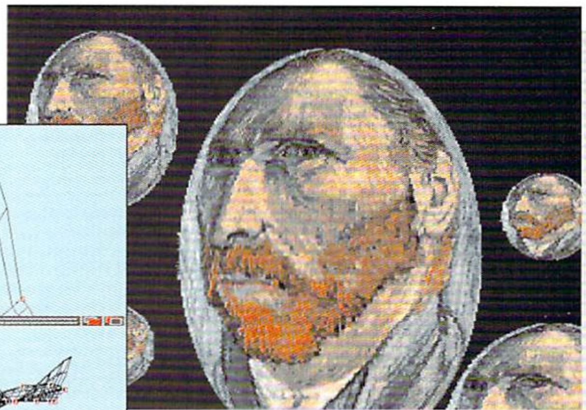
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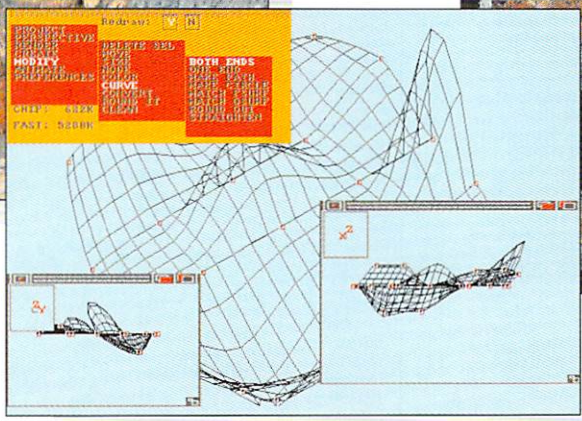
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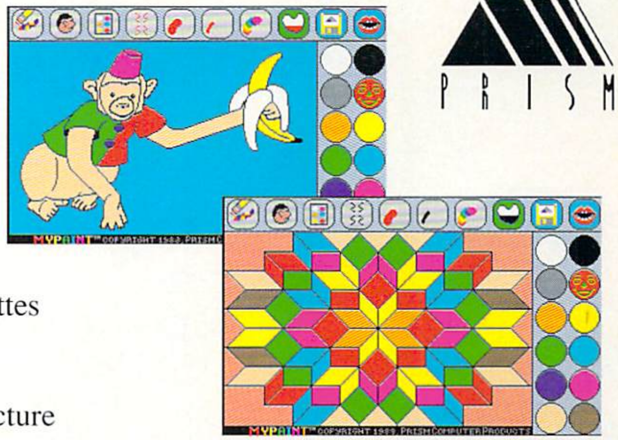
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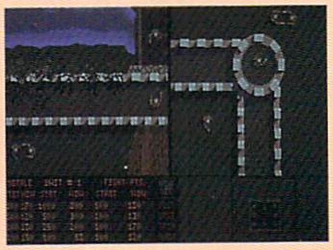
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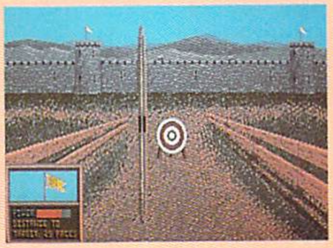
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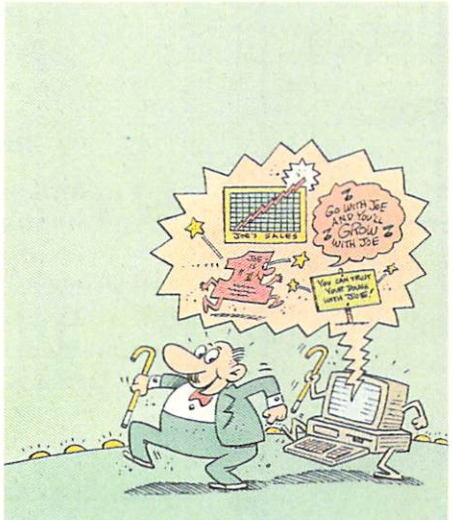
FEATURES

ARTICLES

COLUMNS

NOTE: The final installment of BASIC BY THE NUMBERS will appear next month, as Bob wraps up his four-part data-manipulation tutorial.

DEPARTMENTS



In order to do business, you've first got to get a foot in the door. Making an effective, memorable business presentation is often the key. So why not let your Amiga help you out? With all its multitasking power and terrific graphics, video, and sound capabilities, it's a natural for producing sophisticated presentations in a variety of media.

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GAMES

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ZEITGEIST

Not so quiet on the European front.

THE SECOND international Amiga developers conference, held in Frankfurt this January, was both entertaining and educational for me. Educational because I had the chance to talk to a number of European developers, dealers, and Commodore people. Entertaining because it was held in Frankfurt, where there is plenty of good food, night life, and great beer. The people on the Commodore Germany staff were very good hosts, and I felt very comfortable wandering around the city by myself or with other Amiga people.

There seems to be a fair amount of Amiga activity in Europe, but it is very fragmented. If you look at the entire European market as one giant country, the installed base of Amigas is the highest in the world. But you can't look at it that way. It is many small markets in a relatively small geographic area. That is what makes it difficult for developers there.

For example, there is a small company in Udine, Italy called Cloanto, which has a very nice, fast word processor and an Amiga software and hardware system for the handicapped. They have had to think about selling their products all over the world because the installed base of Amigas in Italy is fairly small. Their word processor has a requester that lets you choose between five languages. How many American-made word processors do that? How many American developers would feel that they had to do that to sell enough copies?

Developers in Europe are more concerned with designing their products to be saleable in a number of formats in different countries. But having multiple formats isn't enough. In Europe, because the Amiga is sold in both computer stores and mass-market outlets, many more Amiga 500s are purchased there than in the U.S. The average age of an Amiga owner is lower, disposable income is lower, products are harder to get and more expensive. Piracy seems to be a way of doing business. If you are interested in a program, you get a pirate copy; if you like the program enough, then maybe you buy a legal copy.

Almost every developer that I talked to would either like to get into the U.S. market, or is already planning to do so. The U.S. market is one giant installed base with only one language and one set of laws. On the surface, the only problems appear to be the import laws, the NTSC video standard, and distribution. But there are other problems for European developers trying to get into the U.S. market.

In the U.S. we are very picky about the English language. We don't speak it very well, but we can certainly spot a manual that has been hastily translated, or a menu item with a British spelling. We also expect a certain type of professionalism in package design and advertising. Americans are prejudiced against non-American products. And as far as the U.S. distribution system goes, there are dozens of companies right here in the U.S. that haven't figured out how the system works.

There is a lot of enthusiasm for the Amiga in Europe. The Amiga is taken more seriously in areas like broadcast television, graphics, and general business. Some companies are distributing their products in the U.S. either one their own or through an affiliated label arrangement with a U.S. or Canadian-based company. But for the most part, the majority of the European products that we have seen in the U.S. are games. They are good games, but I didn't see a single game in the conference demo room.

Europeans are interested in American products and Americans are interested in European products. Some companies are trying to make it work on both sides of the Atlantic, and I think that eventually it will work. The Amiga may be one of the first truly international machines, and I think we will all benefit from that. If nothing else, I get to travel to some great places.

Oh yes, during a night of barhopping with a pack of developers, a dealer, and an Amiga artist (all from Norway), I played a game of pinball against a young programmer. The bet was that if I lost, I would mention him in the magazine. So. . .Hilsen Stig Petersheim. Ikke så støyende. Remember, the machine didn't have a mouse.

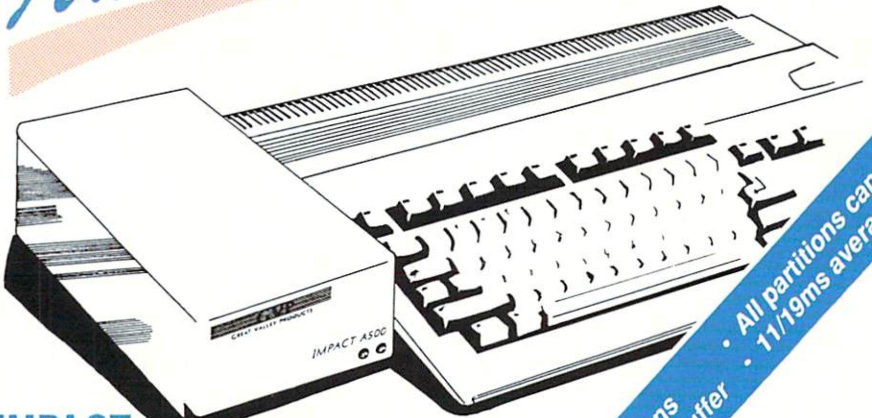
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Guy Wright

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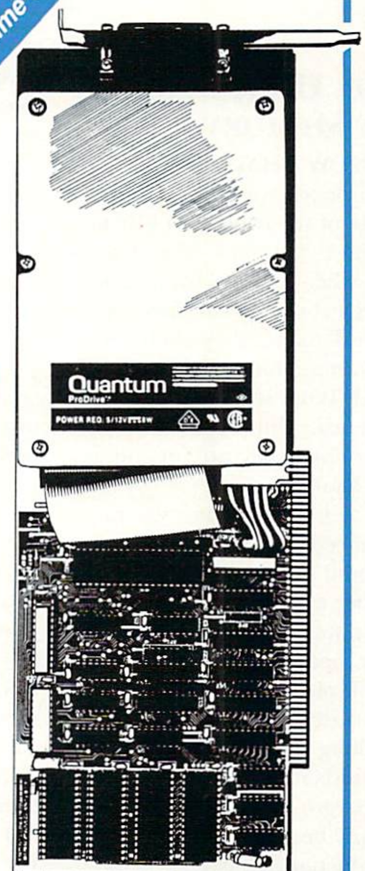
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REPARTEE

Comments, complaints, and concerns from

AmigaWorld *readers.*

THE HIGH COST OF MEMORY

I KNOW THAT the reason chip prices are so high is because of the shortage of them in the U.S. In any other market, when manufacturers see such a shortage coupled with high demand, they gladly produce something to fill that need. What is wrong with the American chip manufacturers? Why don't they put an end to this shortage?

The idea of paying several hundred dollars for a small amount of RAM would not bother me so much if the high price were justifiable. However, because the prices are a result of supply instead of actual costs, someone is making a killing selling these chips. It reminds me of the Arab oil embargo: Prices went sky high simply because of limits on production. I sincerely hope that this is not the case with regards to the American chip manufacturers.

Craig Massner
Burlington, IA

THE FIVE DAYS OF CHRISTMAS

ON THE FIRST day after Christmas, my son loaded a fresh disk out of the package, straight from the factory—Don Bluth's Dragon's Lair [ReadySoft]—at the Workbench prompt, and the following message appeared on the screen: "Your Amiga is alive and well and it has been infected by a virus. . .other disks may be infected." Now we are out at least $50 for the program, and we still haven't determined how many other programs were infected. When I called the company in Canada, they simply treated it as a prank and advised me it could not happen on a factory disk.

On the fourth day after Christmas, my son followed the instructions that come with Battle Chess [Mediagenic] and proceeded to load the program into our brand new $900 GVP hard drive. Unfortunately, after spending the second and third day after Christmas loading other applications programs into the hard drive, Battle Chess wiped out our hard drive and all the work preceding it.

I currently own three MS-DOS computers that I use daily in my office, and have *never* encountered a problem similar to, or as potentially devastating as, the problems I encountered in less than five days with the Amiga.

Why don't the manufacturers and distributors of these software packages, who scream "don't pirate software," take these problems seriously and do something to protect the consumer?

Mine has been an expensive, time-consuming, and frustrating experience. The Amiga will never compete on the professional level given the garbage and malignant hackers who are setting out to destroy it.

Miles A. Price
Coral Gables, FL

Perhaps your copy of Dragon's Lair did come to you with a virus, but it is also possible, and even likely, that the virus came from some other program you may have used before booting Dragon's Lair. While I do have some reservations about the game itself (see review in this issue, p. 56), my copy of Dragon's Lair was free from any virus infection. As for Battle Chess (see review, Jan. '89, p. 84), the exact same thing happened to me when I used Battle Chess with my A2000 hard drive. After several frustrating evenings of work, I managed to restore only a part of my files.

I also agree with you that software developers should have vigorous quality-control programs that ensure virus-free software for their customers. But don't blame the Amiga for the sins of mere humans. It is, after all, the best personal computer available.

And don't be fooled into thinking that IBMs and their clones are free of these problems. The truth is that they have many more, and far more destructive viruses and trojan-horse programs than the Amiga community have to contend with. And hard drives can crash (for whatever reason) on any computer.

What you as a computer user must do is strive to protect yourself. Make backups of your valuable data and, as mentioned in this month's Help Key column (p. 90), I strongly urge you to get a good virus-detection program and install it in your startup-sequence. And don't underestimate the value of reading reviews in the Amiga-specific journals. Sometimes the warnings are already there.

—Lou Wallace
Contributing Editor

DYNAMIC DODSON

HOLY POLYSYLLABIC, Batman! Who is this new guy Dodson Yaple? (An obvious pseudonym if ever there was one. What is he hiding from, a basement full of Ataris?) And where have you been keeping him? While it's true most of us don't read *AmigaWorld* for its literary quality, it is certainly more fun to read a review written with flair and a keen (if sick) sense of humor. To the Batmobile—it's time to see what new mischief Yaple has gotten himself into!

Howard Levine
Berkeley, CA

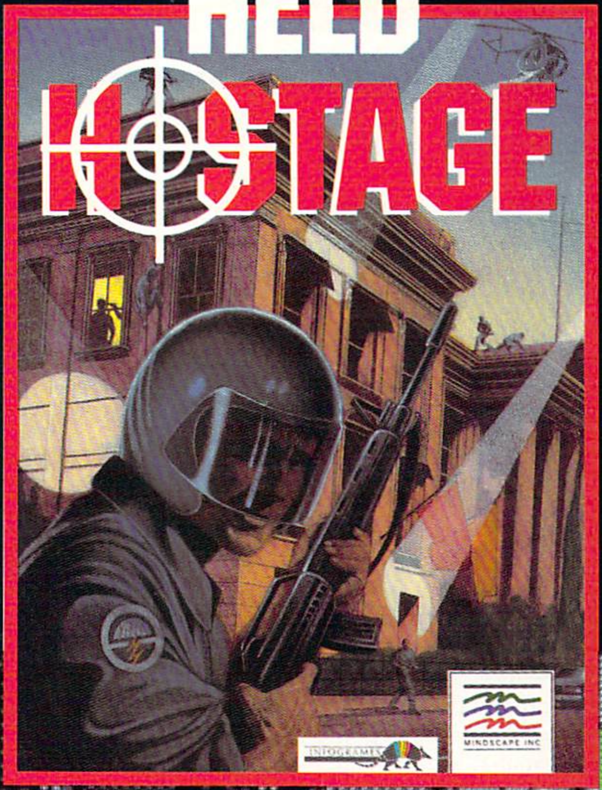
OK, we confess. Dodson's real name is Bruce Wayne.

—Editors

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NOTEPAD

Compiled by Linda Barrett

Meet the Competition



Making connections in Frankfurt.

THE COMPLICATIONS AND benefits of operating in an international market were the themes of January's European Amiga Developers Conference in Frankfurt, West Germany. Developers, dealers, and Commodore representatives from all over the world met to share experiences and the latest Amiga news.

Organized by Commodore Germany and CATS (Commodore Amiga Technical Support team based in West Chester, PA), the international conference was almost a carbon copy of the U.S. developers conference held last August in Washington, D.C. Most of the talks were updated versions of last summer's seminars, but, because few European developers attended in Washington, they welcomed the information as new. The only surprise for American attendees was the 2232 board. Controlled by a 6502 chip, the board offers seven serial ports for the A2000 and is an important milestone for using the Amiga in a local area network.

Much discussion centered around doing business in a multilingual, multinational situation. Differing laws and requirements make information gathering difficult. Because very few European developers have access to legal modems (many countries require modem owners and operators to be licensed), keeping everyone up to date is hard even for Commodore.

Americans and Europeans agreed they should develop with an international idea in mind from the start of a project. As Gail Wellington, General Manager Worldwide Product and Software Support for Commodore West Chester, explained, "It is easier to plan an NTSC version of a program from the very beginning than to convert an existing PAL program after it is finished." Developers from the other side of the Atlantic echoed the message, adding that European buyers are very interested in American-made products.

Commodore talked a great deal about its high-end, vertical-market push and very little about enhancements or marketing plans for the A500. The topic was a strange choice, considering sales figures indicate A500s outnumber A2000s by nearly seven to one.

Attendees were pleased with the conference and left with positive feelings about the Amiga. As always, some people were a little less positive about Commodore, based on its plans and tactics of the past. In the future, Commodore will convene developers conferences every six months, alternating locations between the U.S. and Europe. A June meeting in San Francisco is next on the itinerary. The conference schedule is a start toward a better exchange of information. *—GSW*

Seeds of Success

EMMY-WINNING COMPOSER and performer Warner Jepson has grown a money tree with his Amiga.

A contributor to electronic-music experimentation during the '60s and '70s, Warner was eager to plant an Amiga (an early A1000 and, more recently, an A2000) in his bank of synthesizers and tape mixers. He nurtured it with a liberal helping of Deluxe Music Construction Set (Electronic Arts) and out sprang *The Money Tree*, a musical based on an early '50s short story that appeared in *Cosmopolitan*.

Deluxe Music was the key. "It reduced the amount of time and energy I spend in composing," explained Jepson, a member of the Los Angeles-based Lehman Engle Theatre Workshop. "Before, I would play an invention, write it down, play, change, practice, play, and never know whether I was getting off on my playing or the piece. It was difficult to listen objectively. My perspective got cluttered between one 'right' and a lesser 'right.' Now I sit back, listen, compare, and everything is right. The choices are faster, truer, and it's become more and more like play."

A resident of San Francisco, Jepson's appreciation of the notation capabilities of Deluxe Music Construction Set increased as he worked on songs between commutes to Los Angeles. "In the old days when I wanted to send off a song in progress, I'd have to take pen and ink and try to make a perfect final copy...but it never was. I'd always want to change something. Now, at any point I could mail down a copy with lyrics for comment, then incorporate changes, and print out perfect revisions, right up and into final rehearsal." Completed, *The Money Tree* was presented in a reading at Dorothy Chandler Pavilion in Los Angeles and is waiting for a producer or recording contract.

In addition to musicals, Warner has composed scores for films, television, and modern dance groups such as Anna Halprin's Dancer's Workshop. In a concert tour of the U.S., he played the keyboard-less Buchla Synthesizer in company with Stephen Beck on the first video synthesizer.

Warner anticipates an exciting future opened up by the Amiga and similar machines. "The computer is going to change the whole course of music because it is now open to everyone. Before, except in intuitive music like jazz and rock, there was a dependency on a very difficult musical language and performance. The computer now supplies the theory, doesn't need a conductor, and it can perform things no human could ever play, but . . ." he says with a smile ". . . the choices are still going to come out of the human being."

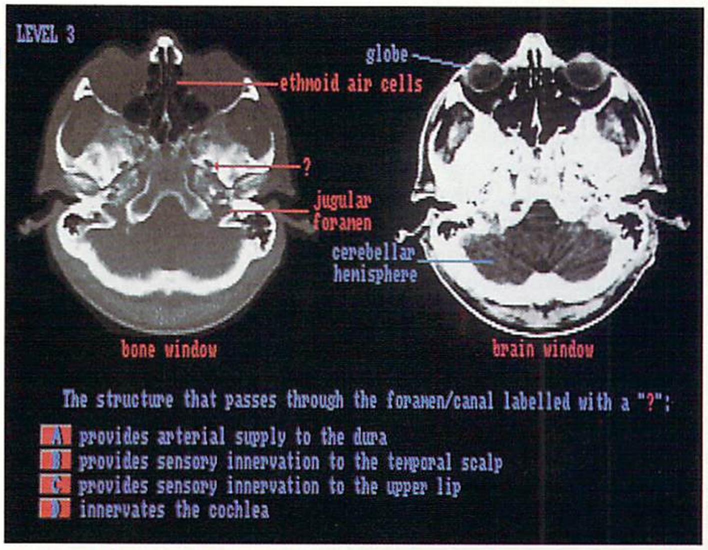
—Sue Albert

Science Quizzes

MEDICAL STUDENTS AT Ohio State University have a new stop in their radiology rotation: the Amiga lab. Sporting an A2000 and two A500s, the lab currently offers five radiology tutorials, the majority of which deal with the brain. The program shows the student a series of digitized scans and related multiple-choice questions. Clicking on the correct answer yields screens with supplimental information and a scan with the appropriate features labeled. Click the wrong answer, and the program explains the error, offering a second chance.

The tutorials are the joint effort of Assistant Professor William Bennett, M.D. and Robert McGhee, Jr., M.D. While McGhee pioneered the idea and designed the first program, Bennett modified the tutorial to a generic template into which the team can insert new questions and images. The pair digitizes the scans with Digi-View (NewTek), then enhances and labels them using Digi-Paint (NewTek), DeluxePaint II (Electronic Arts), and Pixmate (Progressive Peripherals & Software). A script written with The Director (Right Answers Group) pulls the tutorial together. They plan to offer a new tutorial each month, eventually covering radiology on all parts of the body.

While Bennett and McGhee designed the tutorials for medical students, they hope to expand their audience. Residents at the OSU Hospitals are encouraged to use the tutorials in the school library. In addition, OSU offers continuing medical education credits to practicing radiologists who complete the tutorials.



The correct answer is B: provides sensory innervation to the temporal scalp.

For more information, contact William Bennett, M.D. or Robert McGhee, Jr., M.D. at: Ohio State University, Department of Radiology, S. 209 Rhodes Hall, 410 W. 10th Ave., Columbus, OH 43210-1228, 614/293-8315. ***—LJB***

M

Do, re, M . . .

By Tim Tully

WHILE THE TERM algorithmic composition often conjures up images of soulless automatons spewing out strings of random notes and rhythms, replacing human inspiration with Orwellian machine sounds, M from Intelligent Music is a benign yet powerful software tool that lets you tap your computer's compositional strengths. Whether you are a skilled music professional or possess no more music gear than an Amiga and ears, you can use this intelligent algorithmic instrument.

M can play IFF-8SVX-formatted samples through the Amiga's internal voices. The package includes an Instruments disk loaded with sampled sounds: 12 percussion, two wind, two synthesizer, four weird (CowMoo, BangZoom, Bark, and Voice), and three string (SlapBass, Violins, and Pluck). This is a reasonably useful variety, but the Amiga limits sound quality and allows each sample to play just one note at a time over three octaves.

Using any Amiga MIDI interface, however, M can play up to four MIDI synthesizers, drum machines, and samplers. Under MIDI, sound quality and polyphony are limited only by the instruments themselves, and because most synthesizers and samplers can play eight to 16 notes simultaneously, you can achieve much more.

It Goes Something Like This

M's main screen offers you four Players, each of which can play its own pattern of 100 steps—one note per step—using an Amiga voice or MIDI instrument. Double click on any Player and you'll bring up its Pattern Editor, a grid flanked by two rows of piano keys. Each square on the grid indicates one step, into which you can place a pitch ranging from five octaves below middle C to the G five octaves above middle C. You can create a pattern of notes for each Player by clicking on steps. As you click, the note plays and the square fills with color. If you are using MIDI, you can also enter the notes by playing an instrument, and each step can be a chord consisting of as many notes as the instrument can play. You can add or delete notes at any time with the mouse.

Closing the Pattern Editor and clicking on M's start button causes the program to step through all four patterns, over and over, playing each pitch as a quarter note in the tempo you've chosen.

The Output Grid, at the top of the main screen, lets you change overall time values for each Player's notes with a numerator from one to 99, and a denominator that you can set from one to 16, or at 24. As you increase the numerator the notes play more slowly; raising the denominator makes the notes play faster. This sounds complex, but you don't need to understand it—you just click until you hear a rhythm you like.

A simple way to use the Output Grid would be to have Player One play all quarter notes; Player Two, half notes; Player Three, eighth notes; and Player Four, sixteenths. You are not restricted in terms of divisions though—you can play seven beats against four, or any other polyrhythm. Next to the Output Grid are buttons that toggle each Player on and off, allowing you to listen to any combination of Players.

Add Some Cybernetic Soul

M's Variables—where the real algorithmic activity goes on—are amazing. Note Density, a bar that you can set from zero to 100 for each Player, determines the probability of M playing or skipping a note. Set Note Density to 50 percent, for example, and there is a one-in-two probability that M will play any given note in a pattern.

The Order Variable is a bar with two sliders: Cyclic Random and Utterly Random. When you first open the window, both sliders are to the far right. Slide the Cyclic Random slider left, and M rearranges and stores the order of notes in a pattern. The farther left you set slider, the more M plays the new note order and the less it plays the original. The Utterly Random slider causes M to pick notes arbitrarily from the pattern it's playing.

As an example, give Player One a Bass sound and let it play an A-major chord in quarter notes with just a little randomness; give Player Two a piano sound, input a pattern consisting of two A-chord voicings, set its Note Density to 50 percent, and have it play half notes. Key the A scale into Player Three with a high-pitched sound, and set it to play 100 percent Utterly Random eighth notes. After adjusting only three variables—Note Order, Density, and the Output Grid—and using only three Players, to the very degree you were bored with your original patterns, you'll be knocked out by how musical things have become.

And Some Cyclic Spice

The next algorithmic modifier is the immensely powerful Cyclic Editor. Click on

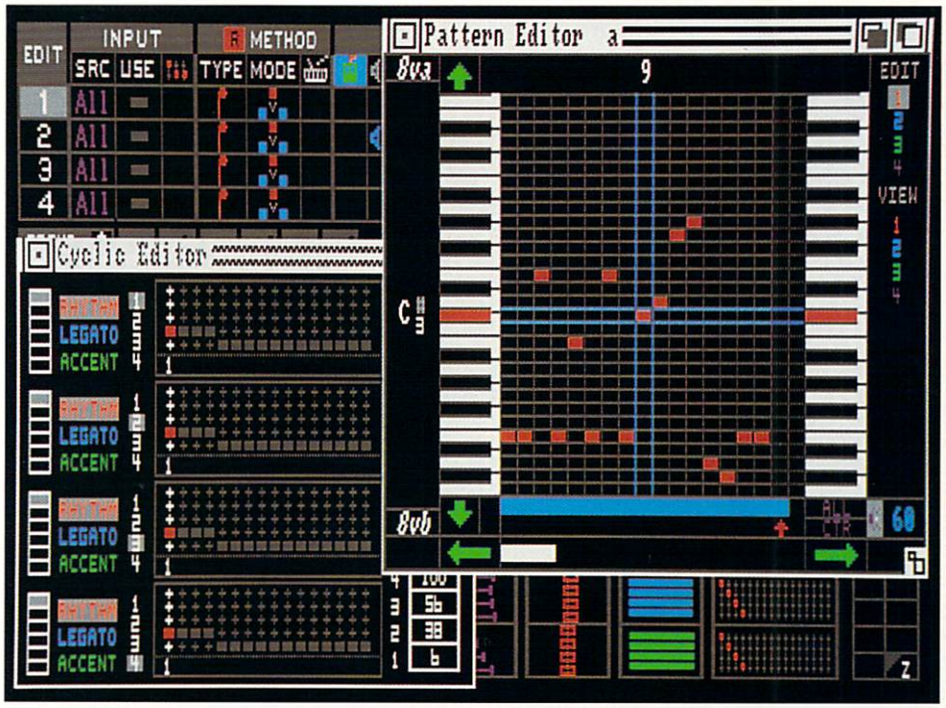
its section in the main screen and you'll get a window containing grids. These also have steps that proceed from left to right, but only 16 of them; the vertical elements control levels. For each Player, there are three grids: One lets you control rhythm, one controls legato, and the last is for accent.

To exemplify the process, let's give a Player a four-note pattern and set the accent grid to four steps. For each step you can choose from five accent (relative volume) levels. If you set the first step high and the rest low, the pattern's first note will always be louder than the others. Set the accent grid to eight steps with the first high and the rest low, and the first note of the pattern will be louder every other time it plays. You can select not just one, but up to all five levels for each step, whereupon M will randomly choose a level each time. If you set the steps to a number not evenly divisible by the notes in the pattern, things become less predictable, and hence more interesting.

The rhythm and legato grids work the same way. Rhythm varies the metric value of the notes (half notes versus eighth notes), and legato determines whether a note is played for its full metric value or cut short. For all three grids, you can also program the overall range of MIDI velocity messages (which control a synthesizer's volume and often timbre) that M sends to your instruments.

Then the Whole Band

After you have set the parameters for one pattern, you can begin to think more globally. M has six groups of completely separate patterns, six sets of all the variable grids and windows mentioned, and a couple more, as well. It can also send 16 sets of MIDI program-



Power players: a Pattern Editor and the Cyclic Editor on M's colorful main screen.

change settings to alter your synthesizers' sounds.

You can change all of these as M plays, either by clicking on one of 26 "snapshots" you have made of setting combinations, or by moving a mouse-controlled conductor's baton over a 36-square grid to invoke different combinations.

While you choose from among the variables you've set up, M is improvising along the parameters you've given it. The program allows you play to an instrument along with it, and to capture and store your performance as a standard MIDI file. M can then import this file as a pattern, to play like any other pattern, or as a sequence, to play as is along with its four Players. You can also transfer the MIDI file to any Amiga sequencer that reads MIDI files.

M's documentation is very well written, especially considering the program's complexity. It is organized in a way that's useful both for getting up to speed and for reference. My only complaint is the copy protection; each time you boot, you must type in a word from the manual.

M is excellent. Trained musicians and composers can get coherent results very quickly, while people who don't even know what a major scale is can see intimately the effects of pitch, meter, phrasing, and so on. This is everybody's music program.

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Turbo Silver

Sculpt-Animate 4D

Back from the drawing board.

By Sheldon Leemon

AMIGA RAY TRACING is maturing. Turbo Silver and Sculpt-Animate 4D, updates of two early entrants in the realm of Amiga 3-D rendering and animation, represent the second generation of such programs.

Turbo Silver

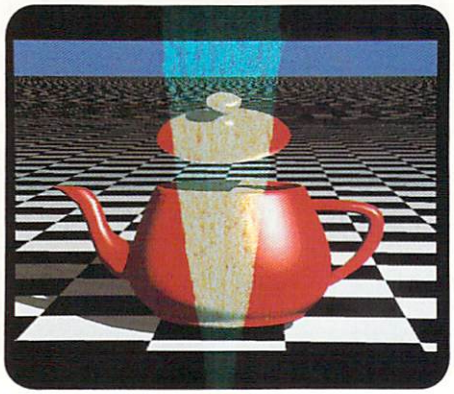
Silver 1.0 owners would scarcely recognize the latest incarnation of Impulse's ►

3-D program. While the original version employed basic shapes (cubes, spheres, and so on) for scene construction, and offered limited drawing control, Turbo Silver 3.0 lets you build objects from triangular faces and provides tremendous control over factors such as lighting, shading, and focus. The program's drawing speed has also improved; it is now among the fastest ray-tracing programs available. Instead of being integrated into a coherent interface, though, many of the new features seem to have been just tacked on. As a result, it takes a while to become familiar with all the features and how they interact.

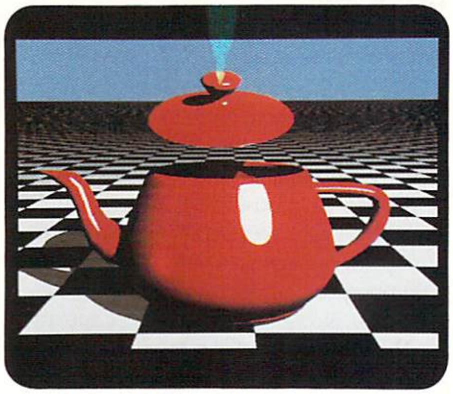
Turbo Silver's object editor uses separate windows for top, front, and side views. Unfortunately, each window fills the screen and cannot be resized, so you must flip between views as you manipulate your objects. With the editor, you can create objects by linking points into edges and then triangular faces. The editor contains a tool for creating a single object from a number of two-dimensional cross sections, and others with which you can create 3-D objects by spinning or extruding 2-D outlines. You can also create objects by combining pre-made shapes such as spheres, cones, and tubes. You can alter the size, position, or rotation of a completed object in any or all axes.

Although the object editor is full-featured, it is clumsy to use. The system involves multiple modes, and a single action can produce different results depending on the mode you're in. In Add Points mode you can add to an object, but you cannot select a different object until you enter another mode. Often, you are forced to take several steps to achieve one goal. Moving an object, for example, is a three-stage process, and with each step the program takes several seconds to redraw the entire scene.

Turbo Silver's real strength lies in object rendering. A vast number of settings are available for changing an object's appearance, many of which can be applied to selected faces only, not just to the entire object as with Sculpt-Animate 4D. The smoothing feature rounds facets, and the reflectivity setting controls the degree of mirroring as well as the color of reflected light. One setting imparts a shiny finish to non-reflective surfaces, while another makes your object slightly luminous. With the filter setting you can set the object's degree of transparency and the color of light that passes through, while the index-of-refraction control determines the way transparent and translucent objects bend light. The blending control regulates the degree to which shaded areas are dithered. The roughness setting determines surface texture. Two more controls affect the intensity of an object's glare spot (which



Tea for two: A la Turbo Silver...



...and Sculpt-Animate 4D.

reflects light), and the spot's brightness.

Turbo Silver's palette control lets you select a uniform color for an object. Through the palette control you can also access texture mapping, a feature normally found only on high-end graphics systems. With texture mapping, you can wrap an IFF brush—a scene or a pattern—to the surface of your object. Turbo Silver also allows you to load two-color IFF picture files as stencils, two-dimensional objects with surface properties, capable of casting shadows.

Turbo Silver offers numerous lighting options. You can include up to 32,000 light sources in a scene, each having several properties. A light source can be a lamp, whose lighting power varies according to its distance from an object, or a sun, which illuminates all objects equally; you can also add ambient light, which comes from no particular location. You can determine whether the light causes shadowing, and can control each light's intensity; you can even load an IFF brush onto the light source and project the image onto your scene.

Picture-control settings affect your entire scene. You can set an edge level to regulate the degree of anti-aliasing (which smooths jagged edges). You can set a fuzzy focus to blur the background as it fades toward the horizon, and you can determine camera position, angle, and focal length.

Hi Ho, Animation!

Turbo Silver allows you to create animations in two ways. The first method is rather tedious, and is suitable only for short sequences; it involves copying a scene to multiple frames and editing each. For longer animations, you will want to use the story method, whereby you assign paths to objects and let the program render each scene as the object follows the path. A story describes the object's motion; the problem is that you can use only one story at a time. To have multiple objects traveling separate paths at the same time, you must create various stories and merge them. The program does not have the powerful key-frame animation method of Sculpt-Animate 4D and VideoScape 3D (Aegis), which allows you to set starting and ending scenes, then creates the intermediate frames making necessary adjustments automatically.

The Turbo Silver package includes two software versions: one for machines equipped with the standard 68000 processor, and another for use with 68020 processors and floating-point math coprocessor chips. The 68000 version uses integer math, which makes it relatively fast, though ray tracing inherently takes a long time. Using the 68020 version with Commodore's A2620 accelerator, it took approximately 40 minutes to draw a scene containing an object with 2200 faces. Turbo Silver operates on a 512K machine with floppies, but serious work requires extra RAM and a hard disk.

The manual is comprehensive, but it's ►

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as disorganized as the program itself, and it doesn't have an index. Fortunately, Impulse has a toll-free support line, and a phone call or two is usually enough to set the beginner on the right path.

SCULPT-ANIMATE 4D

You could argue that the fourth dimension is time, as Sculpt-Animate 4D draws ray-traced scenes three to six times faster than its predecessor, Sculpt-Animate 3D. Cynics might insist, however, that the new D stands for dollars; the price tag has doubled while the program maintains substantially the same format and capabilities.

Still, the upgrade offers a number of significant new features. The most prominent of these is a trio of drawing modes for rendering 3-D scenes. Sketch mode draws very quickly, but produces flat-shaded scenes that are not very accurate or realistic. Scanline Painting mode is similar to Sketch, but it handles intersecting objects correctly and requires more time to draw. Finally, Scanline Snapshot mode rivals ray tracing for rendering realistic images (the main difference is that Scanline Snapshot does not produce shadows and reflections), but works in a fraction of the time.

Other new features affect how a scene is drawn. A dithering control is now part of the Anti-Aliasing menu; with it you can adjust the graininess of pictures created in the Hold-And-Modify (HAM) mode. A new texture called metal can give objects a metallic look, and you can use the new video image size to create 352 × 240 overscan HAM images.

D IS FOR DRAWING

Some new features make object-creation easier and more precise. The refresh speed of the Tri-view, the three windows in which you create wire-frame models, has improved so redrawing after changes takes less time. Also, you can now hide complex objects so that they don't appear in the Tri-view and thus don't slow screen updates. The optional 3-D grid is useful for aligning points and edges precisely, and menu commands allow you to "snap" an object to the grid, moving selected points to the nearest intersection. A coordinate window lets you see the absolute X, Y, and Z locations of any point, and line up the cursor accurately. Sizing and placing objects is more precise: Protractor tools enable you to measure angles, and with the tape measure you can determine distances.

New object-creation power tools include a helix tool, with which you can spin and stretch simultaneously (this makes it easy to create objects such as coil springs that have spiral symmetry). The program also now makes provision for simple keyboard entry of 3-D text: Just indicate a directory in which you have saved letters as individual object files. Then, when you press a key, the program places the corresponding object at the current cursor position, and advances the cursor by the width of the character.

A program version that takes advantage of accelerator cards with math coprocessor chips is also included. The program accommodates animations too large to be played from RAM by sending images one frame at a time to a professional-style VCR. The program includes a driver for BCD's single-frame controller, which automates the recording of animations. Keyboard macros are another convenience; you can assign menu selections to each of the alphabetic keys.

Sculpt-Animate 4D isn't exactly a snap to use, but the user interface is good, given the complexity of the subject. The package comes with an excellent manual, complete with index and quick reference guide, and 30 days of free technical support by telephone (though you pay for the calls to Texas). For $25, Byte by Byte offers a superb one-hour video tutorial on the program.

While the upgrade adds refinements to the original, Sculpt-Animate 4D is not revolutionary. Certain features—real file requesters, for instance—do little more than fix Sculpt-Animate 3D deficiencies. Some features I had hoped to see in this release, such as texture-mapping and the refraction of light by transparent objects, are not here. The new keyword copy-protection scheme, on the other hand, I could do without.

DRAWING CONCLUSIONS

Stan Kalisher of Impulse is fond of saying that there is an "aha!" factor in learning to use Turbo Silver—a point at which the options begin to make sense

Continued on p. 64



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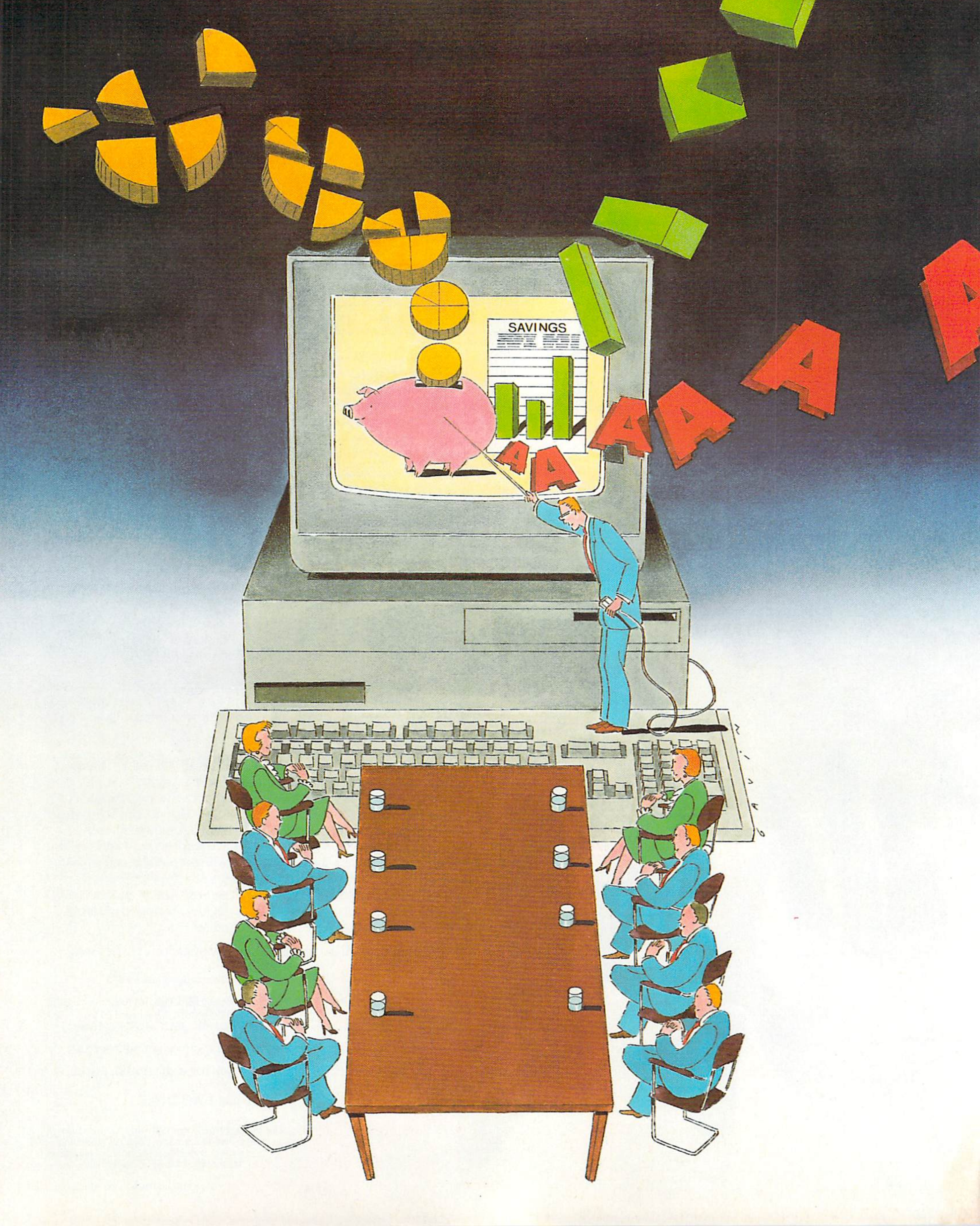
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SAVINGS

How to Succeed in Business Presentations

(WITHOUT REALLY SPENDING A FORTUNE)

Knowing what tools you'll need—and how to use them—can give you the winning edge in using your Amiga to make a successful, and cost-effective, business presentation.

By Bob Eller

IF YOU'RE IN business then you know what an eye-catching presentation can do—create more business! What you may not know, however, is that you don't have to hire an expensive agency to create that professional-quality presentation—if you own an Amiga. With its multitasking operating environment and impressive graphics, sound, and video capabilities, your Amiga has the power and versatility to produce effective, smart-looking business presentations. The key is knowing what hardware and software tools you need to harness that power.

We'll begin by looking at what you will need to prepare an effective *printed presentation* and then focus on how to use the materials you have created in a *live presentation* for your client. Finally, we will show you how to combine the Amiga's graphic and video capabilities into a recorded *video presentation* that your client can view anytime. The accompanying sidebar outlines a presentation scenario when aspiring company meets hard-boiled client.

Keep in mind that because the Amiga allows you to prepare your presentation for several different presentation media, the first thing you need to do is to determine which media will best help you reach your "target audience." While a slick, MTV-style video may be desirable for less conventional business concerns or for reaching a young audience, a professionally printed brochure or single-page advertisement might work better in a more traditional business arena or with a more mature clientele. ►

Before looking at the tools of the trade, however, let's examine some basic system hardware requirements. Many of the things we will be looking at with an eye to producing presentations will involve creating graphics for pages and artwork. Graphics, and the programs you use to create them, require a great deal of memory. I would recommend you have a minimum of one megabyte of memory (more if you can afford it) and two disk drives. Ideally, if you can manage it, a hard drive will make your work both faster (programs run from a hard disk execute more quickly) and easier (the greater storage capacity and more efficient organization of a hard disk will better handle the large number of files you will be combining to create your finished presentation).

Other hardware you may need—particularly photographic and video equipment—will depend on the types of presentations you create. Service bureaus are widely available to take your Amiga work and produce a high-quality printed page or slide. Depending on the frequency and the extent of your presentations, you may often find it more cost effective to send your work to a service bureau rather than invest in an expensive piece of equipment. We will look at some of this special hardware a little later on. Information about all products—hardware and software—and services mentioned in the article is contained in the accompanying "Product Information" box, which is presented alphabetically by name of product, service, or reference title.

Word and Image: The Printed Presentation

YOUR PRINTED PRESENTATION begins in the planning stage with an eye to its graphic design—the careful blending of typography (type fonts, sizes, styles) and graphics (photos, illustrations, and so forth) into an overall page layout. Take a close look at some of your favorite publications and you will notice that many of them have a distinctive style of graphic design. The purpose of graphic design is to make it easy and pleasurable for the reader to understand your message, while making you—the source of that message—memorable in the reader's mind. Think about it: Are you more likely to read and remember the information if it is a black mass of text rather than a balanced presentation of text and illustration in an attractive page layout?

With the sophisticated capabilities of many word-processing and desktop-publishing programs, it is no longer necessary to hire an artist to design your presentation and a printing firm to produce it. Apart from design hints and techniques contained in the documentation of these programs, there are numerous books about the subject. One particularly good general source for type design is *How To Spec Type* (Watson-Guptill Publications) by Alexander White. Also, an excellent source for learning about desktop-publishing design and layout is *The Aldus Guide to Basic Design* (Aldus Corporation). Although Aldus manufactures PageMaker software for the Macintosh and IBM PC, the book is not system-specific and provides valuable information to beginners starting out on their first Amiga publishing venture. Once you get past the basics of design, several Amiga software tools can help you start creating documents that will grab your audience and sell your product or service.

To create text you will need a word processor. Most Amiga word-processing software—including excellence! (Micro-Systems), KindWords (The Disc Co.), ProWrite (New Horizons), Scribble! (Micro-Systems), Textcraft Plus (Commodore), and WordPerfect (WordPerfect Corp.)—will do a fine job in helping you create text for your presentation. Each, however, differs in its features, capabilities, and price. If you plan to later use the text you create in a desktop-publishing program, almost any Amiga word processor will produce text files that can be imported into such programs. If your documents are long and full of complex formatting, you will want a word processor with fairly sophisticated features and extensive formatting control—such as WordPerfect or excellence!—but be prepared to pay a more substantial price. And, in all cases, if you want to use the various style and font changes you have made in your text files later on in the document you create with your desktop-publishing program, make sure that program recognizes the appropriate formatting commands as part of its support of your particular word processor. (For a discussion of the relative merits of Amiga word processors, see "The *AW* Word Procesing Roundup" in the October '88 issue of *AmigaWorld*, p. 48.)

MANIPULATING TEXT AND GRAPHICS

Some Amiga word processors—notably ProWrite and to a lesser extent excellence! and KindWords—allow you to combine text and graphics. If your presentation needs are modest, these programs may suffice—without your having to use desktop-publishing software and highly expensive printers. You can manipulate text and graphics—all three can import IFF (Interchange File Format) images, and ProWrite also accommodates HAM (Hold-and-Modify) images. You can also choose from a limited variety of fonts, and print in color or black and white.

If, however, you have extensive and sophisticated business presentations in mind, you will probably need the more advanced page-creation features, graphics-handling abilities, and high-quality laser-printer support of a desktop-publishing program. (See Figure 1 for an example of how Professional Page, a top-notch Amiga desktop-publishing program, handles page-creation requirements for a one-page business prospectus.) In its early stages, Amiga desktop publishing ran far behind its competitors in the Apple and IBM PC market, but the situation has changed dramatically over the last year. The original Amiga desktop programs—such as PageSetter, City Desk, and Publisher 1000—have all been updated to offer

more sophisticated features and printer support.

In addition, Gold Disk (maker of PageSetter, the first Amiga desktop-publishing program) now offers Professional Page, a program that rivals any of its Apple or IBM competitors. (See "The Desktop Heavyweight" in the May '88 issue of *AmigaWorld*, p. 32, for a feature review of Professional Page.) And Shakespeare: The Page Integrator, from Infinity Software, is a unique program that allows you to produce professional-quality pages of color text and graphics. (See the July '88 issue of *AmigaWorld*, p. 16, for a review of Shakespeare.) What distinguishes these two programs—and to some extent several of the updates of older programs—is their support of PostScript printing.

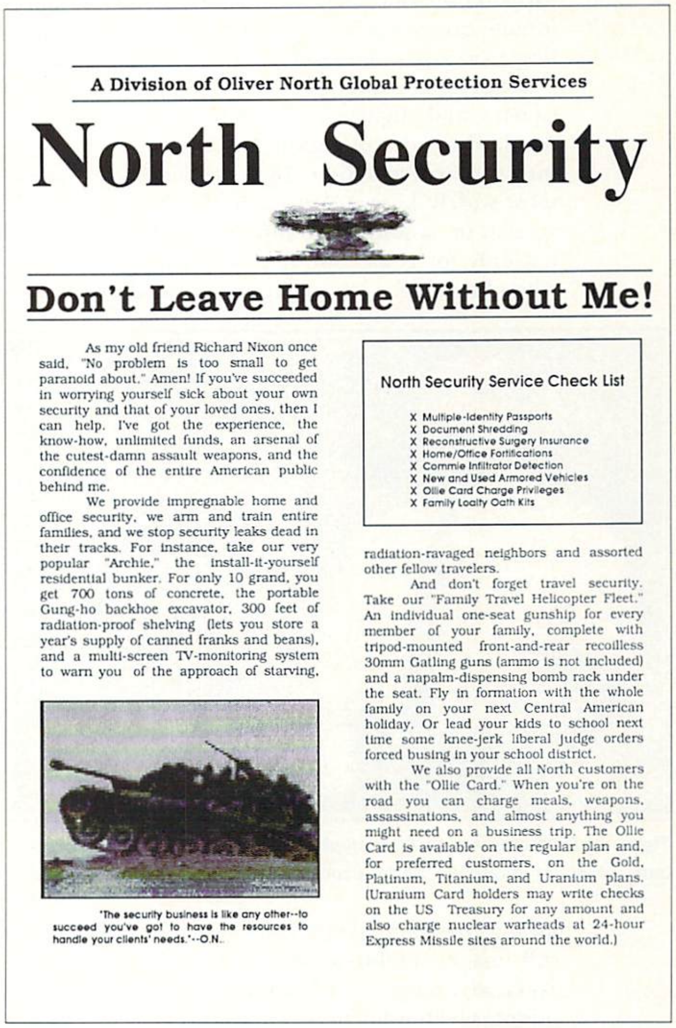
Postscript is a page-definition language for laser printers developed by Adobe Systems. By using PostScript the printer can print text free of the "jagged" look common to most computer output. Professional quality is not without its price. PostScript support will add between $1500 to $2500 to the cost of your laser printer. Fortunately for us, service bureaus are widely available to print PostScript-formatted documents on imagesetters and color printers. Adobe maintains a listing of service bureaus on the CompuServe computer network. Most larger cities have a local service bureau to handle your work. Many of the bureaus, unfortunately, do not directly support the Amiga. You may need to copy your PostScript-formatted file to an IBM-formatted disk, using a file-conversion utility such as Central Coast Software's Dos-2-Dos program, which will allow the bureau to print your file from its IBM computer. Many bureaus, however, have a modem available to receive your work, thus eliminating the need to transfer your file to another disk format. Before beginning any job, contact the service bureau you wish to use and request information about service charges and the kind of PostScript-compatible equipment used. It is a good idea to send the bureau some test files to get an idea of its work before beginning an important presentation.

Graphics Galore

While text may contain your message, the effective use of graphics might be the key to making your presentation grab the attention of your clients. And no personal computer can match the Amiga's capabilities when it comes to graphics.

If you have an artistic bent, then create your own images with any one of several fine Amiga paint programs, including DeluxePaint II (Electronic Arts) and Photon Paint (MicroIllusions). Electronic Arts also offers a neat three-in-one package, Deluxe PhotoLab, which combines a paint program (Paint) with an image processor (Colors) and a print program (Posters) that prints any picture file in any size from one-inch square to ten feet on a side.

Those whose artistic talents are still at the stick-figure stage can make use of the "canned-art" approach by availing themselves of the many clip-art programs on the market. Often containing hundreds of ready-to-import IFF images, these programs are quite inexpensive, usually falling in the $20 to $40 range. A small sample of clip-art disks available might


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X Family Loalty Oath Kits

"The security business is like any other--to succeed you've got to have the resources to handle your clients' needs."--O.N..

Figure 1. Combining ASCII text with IFF graphics and adding display fonts for logo and headline, Gold Disk's Professional Page created the page layout for this prospectus for an imaginary security services firm.

include Art Companion (MicroSearch), Art Parts (Electronic Arts), Art PAK I (Aegis), and Express Clip Art (PAR Software).

Similar to clip-art disks and useful for dressing up text and titling are font packages, which offer a wide and varied range of type fonts, sizes, and styles. There are literally dozens of these packages available, including the Borders and the Business Font Sets from C Ltd. and the Calligra Fonts Series from InterActive Softworks.

In a related vein, a brand new product from Gold Disk, Design-3D, may also be helpful. While we have excluded from discussion such 3-D modeling programs as Byte By Byte's Sculpt 3D and Aegis' Video- ►

Scape 3D on the grounds that their complexity limits them to professional graphics artists, or at least very advanced users, this object-creation program is much less ambitious in its scope and much easier to use for the beginner/intermediate. More importantly, its 3-D text support (fonts included and built-in font editor) makes it quite simple for users to add three-dimensional titling to a variety of presentation graphics.

Some say the ultimate clip art is digitizing. With a camera and digitizing equipment, you can create digitized images of almost anything to incorporate into your presentation. Digi-View (NewTek) is the most widely known Amiga digitizer, and the latest version of its software component (3.0) can be used not only for color, but also for creating black-and-white line art for importing into your desktop-publishing program. While Digi-View can only digitize still images, real-time digitizers—such as Live! (A-Squared) and Perfect Vision (SunRize)—offer digitizing possibilities for moving objects.

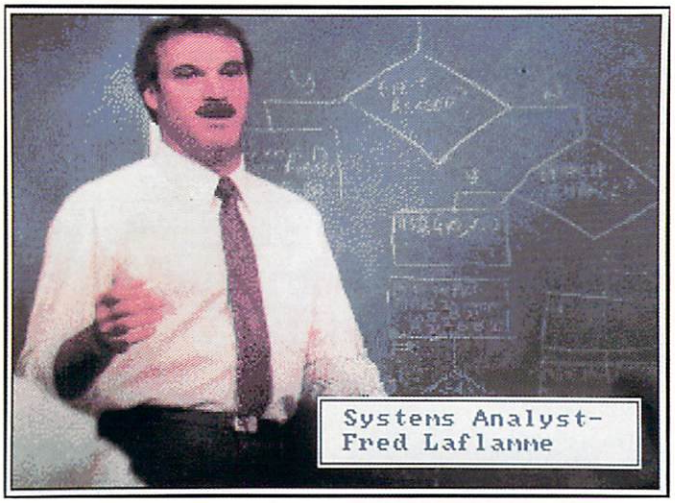


Figure 2. Digitized images (plus captions) of staff members, a company office, or whatever can be easily added to your presentation.

Let's take an example of how to use the digitizing process to enhance a business presentation. Suppose you would like to introduce the development team of your new company (one of whose members appears in Figure 2) in a smart-looking presentation with some added special effects. You would start by using a digitizer to put their pictures on the Amiga screen. With Live! or Perfect Vision, simply place the subjects in front of the camera, with a nice neutral background behind them, and capture each of their faces as IFF files. Digi-View would require an extra step—taking a good photograph first. Once developed, place the photo on the digitizer's copy stand (or, in the case of a slide, on a wall and aim the camera at that). You then plug the video camera's cable into the video plug on the back of the monitor, and switch the monitor's display to composite so you can preview the image and line it up just right.

Once you have captured the image and saved it in the format you have chosen (B&W, 32-color, or HAM), you can then move the image over to the paint program to do a little fine-tuning. This could include anything from putting a simple border around the image and adding a name and appropriate caption, to doing a major reworking of the picture—combining it with other images and color correcting it with an image-processing program. With the right combination of digitized image and paint program, you can achieve a wide range of very effective presentation graphics. (For a useful collection of digitizing tips and techniques, see "Digital Reprise" in the October '88 issue of *AmigaWorld*, p. 39.)

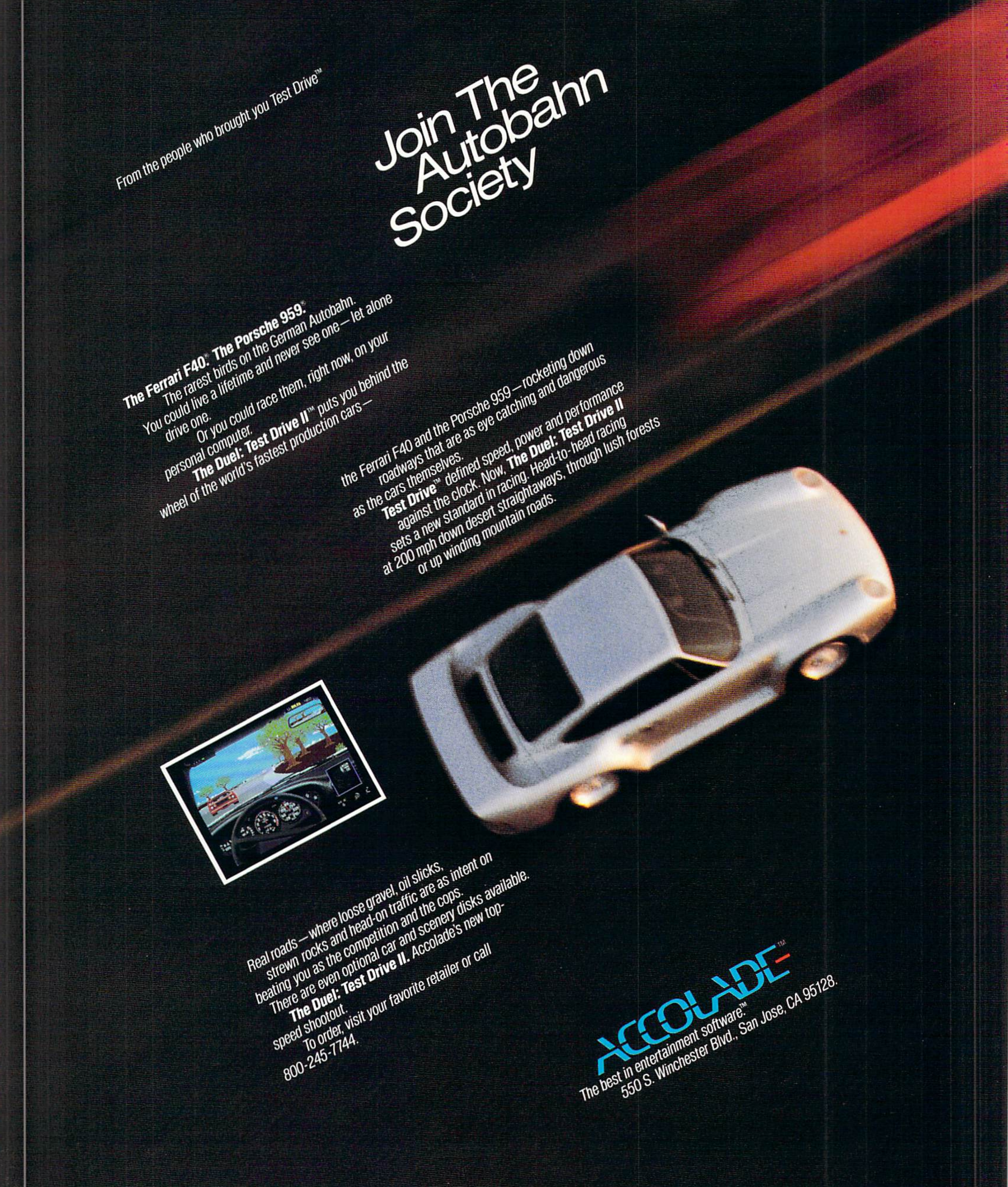
Projecting Your Pitch: The Live Presentation

YOUR PRINTED PRESENTATION knocked the clients dead and now they would like you to give a presentation to the company. This is usually the point where beads of sweat start trickling down your forehead, but the Amiga is ready to bail you out. The written presentation you prepared has the information that got you this far. Now you have the opportunity to highlight your assets. By using the text and graphics you have already prepared, you are ready to produce a live presentation that will close the deal.

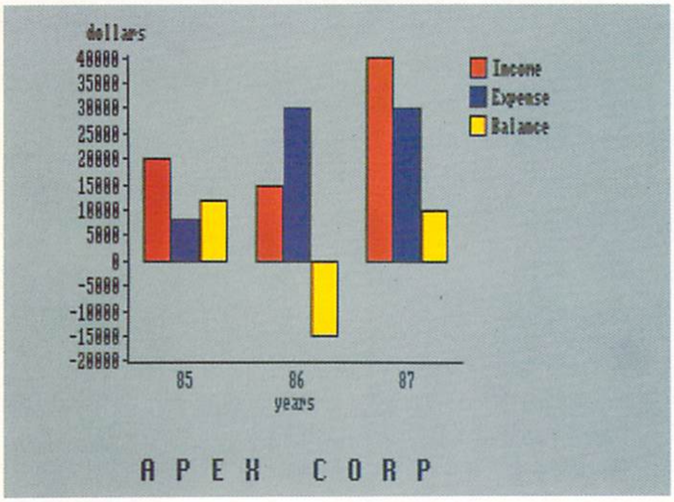
Some people may find it daunting to walk into a meeting to do an oral presentation and have to set up and run their Amiga systems at the same time. For such people, here is another place where a service bureau can help you out. You may find it easier to operate a slide projector during a presentation than to keep a computer under control. If so, service bureaus are available to turn your IFF or HAM images into 35mm color slides. You will probably have to mail or modem your images to the bureau, as companies handling Amiga graphics are harder to locate than those who print PostScript work. Philadelphia Video Lab in Philadelphia, PA, provides excellent service in this regard. In addition, *AmigaWorld*'s monthly "Pull-Down Menu" section often contains ads for such services, such as Hammond Photographic Service of Culver City, CA. The AmiEmporium on American PeopleLink also offers a slide, print, and poster service on line.

If you regularly need to convert your work to 35mm slides, you might want to consider investing in the Poloroid Palette Film Recorder (plus Liquid Light's Imprint software), which allows a 35mm camera to capture slides directly from your Amiga. (See the November '87 issue of *AmigaWorld*, p. 76, for a review of the Palette and Imprint.)

If you would rather use an overhead projector during your presentation, you may want to look at the Xerox 4020 color printer. The 4020 prints full-color IFF images onto a transparency that will produce an excellent image for your overheads. Your local service bureau may also be able to help you out here, too. ►


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Or you could race them, right now, on your personal computer.
The Duel: Test Drive II™ puts you behind the wheel of the world's fastest production cars—the Ferrari F40 and the Porsche 959—rocketing down roadways that are as eye catching and dangerous as the cars themselves.
Test Drive™ defined speed, power and performance against the clock. Now, The Duel: Test Drive II sets a new standard in racing. Head-to-head racing at 200 mph down desert straightaways, through lush forests or up winding mountain roads.
Real roads—where loose gravel, oil slicks, strewn rocks and head-on traffic are as intent on beating you as the competition and the cops.
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550 S. Winchester Blvd., San Jose, CA 95128.

The price tags, however, of the Polaroid/Imprint system for making slides (nearly $2500) and the Xerox 4020 for making transparencies ($1500) are very steep. Remember, you can generate slides or transparencies from hardcopy (a decent laser printout); see your local camera store, print shop, or copy service to find out what they require. You can also try your hand at taking your own screen shots if you own a good camera. Mount your camera on a tripod, masking out all external light with a hood, and shoot directly at the screen. You will need to experiment quite a bit at first—taking fairly long exposures and continually adjusting the f-stops (through about five full stops). Be prepared to use a lot of film.



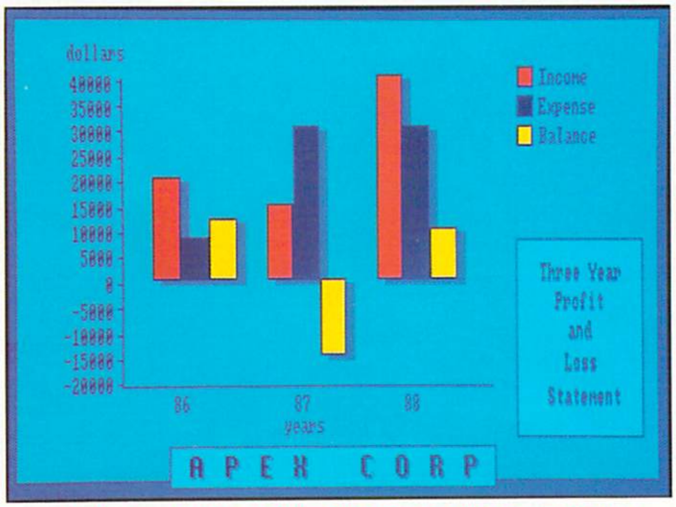


Figure 3. A spreadsheet chart (top) is spruced up for presentation (bottom) with customized colors, titles, borders, etc. in a paint program.

Why Not Take Your Amiga Along?

Also, keep in mind that more hearty souls need not abandon their Amigas at presentation time. Your Amiga can be as helpful in performing your presentation as it is in creating the displays. Many programs have slide show capabilities that let you input graphics files and step through them one frame at a time by clicking the mouse. You can use Mindware's PAGEflipper Plus F/X, for example, as a controller for displaying digitized and IFF images. A multitude of other programs can also help you out in this vein, including Hash Enterprises' Animation:Flipper and Lights! Camera! Action! by Aegis.

Some Amiga utility programs can also help you out if you are making the live presentation with your Amiga in tow. Under live conditions, one ill-placed mouse click could ruin an otherwise persuasive presentation. To take the worry out of running a long sequence of operations (manipulating an image or entering a string of changes in a spreadsheet and reviewing the results at each step, for example), you can use a macro-creation program such as Encore (Elipsys) or The Demonstrator (Meridian). Both of these programs let you record a series of mouse clicks and keystrokes, then play back the sequence by clicking on an icon or pressing a key. To automate your presentation completely, you can add speech and scrolling text.

If you need charts and tables to help emphasize important points of your talk, consider the graphics capabilities of some Amiga spreadsheet programs. MaxiPlan Plus and MaxiPlan 500 (Oxxi) are Amiga naturals that can produce IFF images from your data for conversion to slides and overheads. Analyze! (Micro-Systems) and Haicalc (Haitex) also offer somewhat comparable graphics functions. Creating an IFF graphic of your MaxiPlan spreadsheet is easy. Just type the data you would like to represent into MaxiPlan. Use MaxiPlan's graph functions to design the title, text, and data points, and then have Maxi Plan draw your finished chart. Extend the window of your chart to cover the entire Amiga screen and use the MaxiPlan capture function to capture your Amiga's screen to an IFF picture file. You can then load the IFF picture into DeluxePaint II or any other Amiga IFF paint program and customize your chart's colors, change the text, and delete any unwanted remnants of your Amiga screen that may have been captured with your chart. (Figure 3 shows the "before-and-after" effect of this procedure.)

MaxiPlan and other Amiga spreadsheets are not the only programs that help you create graphic representations of data. Math-Amation from Progressive Peripherals includes a business-graphics module that allows you to create two- and three-dimensional color bar graphs, cumulative line and bar graphs, and pie charts. Other program features perform statistical analysis on columns of data (including groups of data), and plot them in attractive displays.

If you need to include maps in your presentation to display distribution patterns, Bassett Geographic's program Choromap can help. With this package, you can trace a map from a transparency onto your screen, input data corresponding to sections of the map, and assign shades or colors to value ranges. ►

Color Graphics.

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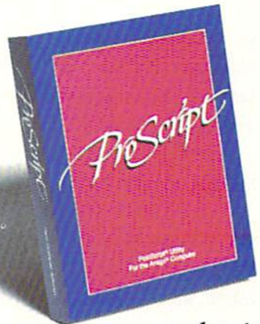
Word is out. ProWrite 2.0 allows you to expand your Amiga word processing to new horizons. Use it to generate proposals with impressive bar charts. Create letters and reports with snappy graphics. Generate television storyboards. Even dash out newsletters with spot illustrations.



And of course, ProWrite 2.0 has all the other features you expect: a spelling checker with 95,000 word dictionary. Mailmerge. And fast graphics printing. Best of all, it works with our font packages, ProFonts I and II, giving you a broad range of professional and decorative fonts.

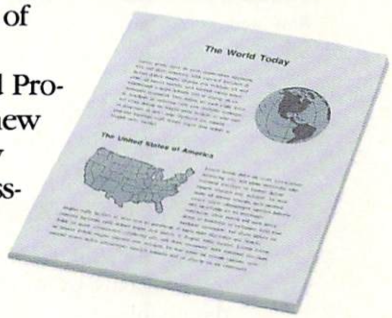


All this, plus ProWrite's powerful editing capabilities and ease-of-use combine to make ProWrite the best word processor for the Amiga computer.

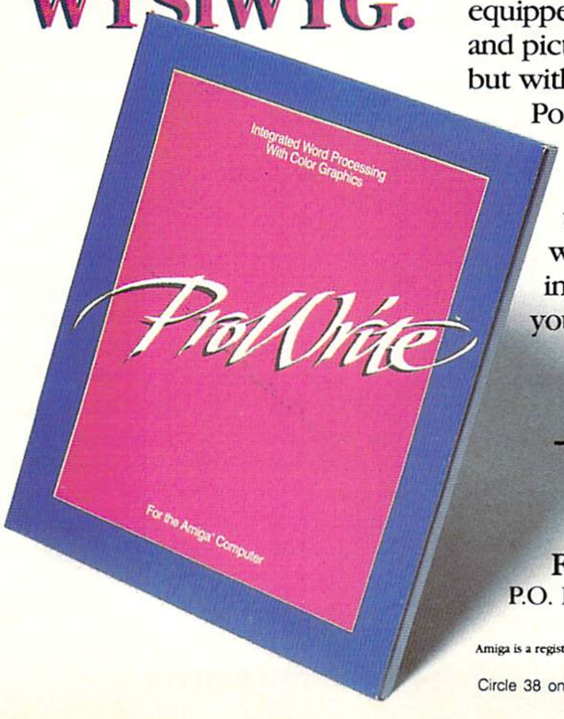


ProScript: Perfection In Print For The Amiga.

ProScript is the new PostScript utility from New Horizons Software that gives you the professional look of typeset copy. ProScript reads ProWrite files and prints them on any PostScript equipped printer, giving you the same multiple font and picture capabilities you expect from ProWrite, but with the typeset quality of PostScript printing.



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They Laughed When I Sat Down to Play the Amiga

THE CONFERENCE ROOM door swings wide, and in walks the CEO with his Marketing Director and an attitude that screams, "Okay, show me!"

Just 48 hours ago, nothing tangible existed, and now you, as Account Executive, are making your pitch for a sizable piece of advertising business. Your palms begin to sweat as the marketing toady asks, "Where are the storyboards, flip charts, slide, and overhead projectors?"

The conference room is empty except for the presence of a VCR, large-screen monitor, and an Amiga.

Flashback

Two days earlier your media director finally got all her numbers, charts, and demographics together. Before, her part of the pitch was relegated to overhead transparencies knocked out on the Xerox machine. Now, however, she loads up DeluxeVideo (Electronic Arts) and begins generating animated pie and bar charts. Labels are applied just as fast as she can type.

Using Live! (A-Squared), she digitizes the title sequences from TV shows she recommends buying. She adds special visual effects with Invision (Elan Design) and lays in the demographic breakouts with TV*Text (Zuma Group/Brown-Wagh). She scripts out the timings and strings the animated sequences together using DeluxeProductions (Electronic Arts) or MovieSetter (Gold Disk), dumps to videotape through a genlock (just to keep all the colors bright and right), and she is ready to write her narration.

Creative Solutions

Storyboards have always been a staple of any presentation of TV commercials—anything from 10 to 40, 4×6-inch cartoon panels that try to give the client some idea of what the commercial is going to look like. They are crude at best, totally ineffective at worst. Now, however, your company can generate *video* storyboards, and do it in hours, rather than days. Beginning with a rough sound track, the art director pulls existing photos and art from magazines and books, feeds those images into the Amiga through a Digi-View (NewTek) digitizer, then animates them with a package such as MovieSetter. The client's new logo is even animated through digitized artwork and Animate 3D (Byte by Byte).

She dumps the resulting animations through the genlock to a VCR, adds the sound track via the machine's audio dub function, and the commercials (now called animatics) are ready for the presentation. The method is fast and efficient, one quarter of the old costs, and probably 50 times more effective.

Bring in the Suits

You and your agency president still have parts to play. For you, Deluxe Productions goes to work illuminating the marketing strategies behind the plan. Animated maps (using clip art) pinpoint target markets, introduction dates, and a breakout of estimated costs. Digi-View again makes things simple. In this case, the presentation is saved to disk so that the visuals can be synchronized to your live presentation, using the package's slide show function.

Finally, it's time for the finish. As your agency president begins his summation, the video accompanies him with images of the agency, its facilities, and the people who will be working on the account. These appear with a full range of wipes, dissolves, and animation effects, all produced with the software and hardware already mentioned. As he concludes, the agency logo, gloriously three-dimensional, spins onto the screen, shimmers in the imaginary light, and fades to black as the music reaches its climax.

As the lights come up, you hand the CEO your agency presentation book that covers everything you have just shown, complete with 300 dot-per-inch illustrations (generated through Gold Disk's Professional Page). He thumbs through the impressive document and mutters, "Ah, a Macintosh. . . just like in the commercials."

You smile and reply, "Apple only wishes!"

"Well, what else could produce a presentation like this?" he asks.

"Hire us and we'll tell you."

You Can Too

Fantasy? No. With an Amiga, two megabytes or so of memory and less than $2000 worth of hardware and software, the presentation outlined above is routine reality. You can orchestrate live, taped, or any combination of presentations at incredible savings in both time and money.

While IBM's greatest achievement is the ability to make very expensive slides, and Macs rely on their monochromatic desktop-publishing prowess, the Amiga successfully encompasses those attributes while adding high-resolution, full-color graphics, video, music, and stereo capabilities. It's the ideal desktop-presentation machine. □

—Gary Ludwick

Gary Ludwick is the president of The Creative Department, a Charlotte, NC-based advertising agency. The Amiga has been an essential part of his company's presentation, graphics, and video capabilities for the past two years.

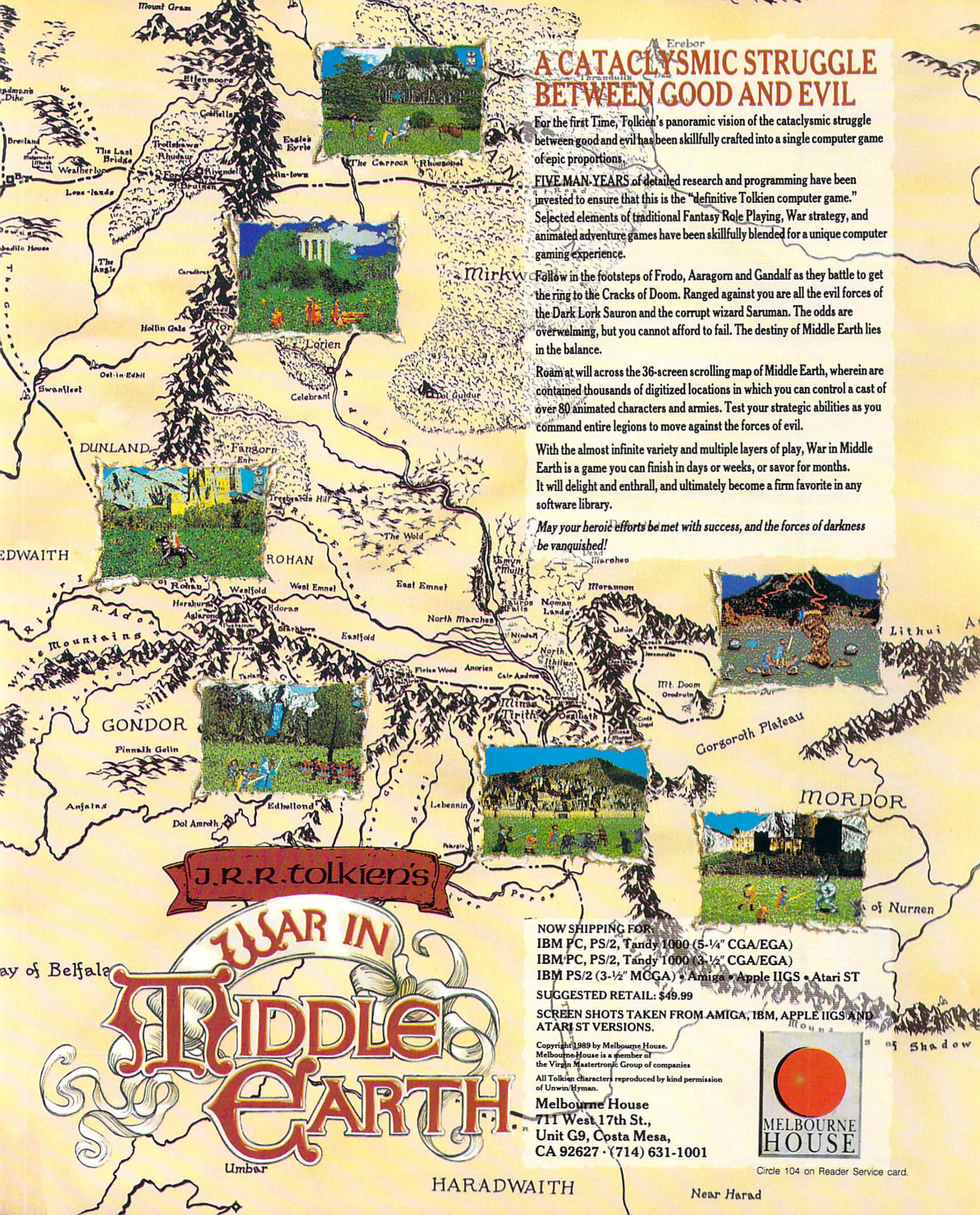
From this, the program will produce a map showing distribution by color.

Lasting Impressions: The Video Presentation

SUPPOSE YOUR CLIENTS are too far away for you to make a live presentation at their offices, or perhaps the people to whom you delivered your presenation need to have further meetings with others in their organization. This is where recording a video presentation can spark that edge of immediacy that could be lost if you are forced to rely on printed materials or word of mouth.

You need only record much of your previously created images, with appropriate sound and video titling added, to splice together a video presentation. You can edit your written presentation into a script and use recorded live images mixed with the graphics you have already created. Combining the pictures from your video camera or recorder with graphics from the Amiga will require a device known as a genlock.

A genlock allows you to overlay your Amiga's graphics directly onto external video and then send the combined picture to another video recorder. More specifically, a genlock synchronizes the video signals between a VCR or camera and the Amiga, permitting video created on the Amiga to be overlaid on top of video coming from the VCR or camera. ►


A CATACLYSMIC STRUGGLE BETWEEN GOOD AND EVIL
For the first Time, Tolkien's panoramic vision of the cataclysmic struggle between good and evil has been skillfully crafted into a single computer game of epic proportions.
FIVE MAN-YEARS of detailed research and programming have been invested to ensure that this is the "definitive Tolkien computer game." Selected elements of traditional Fantasy Role Playing, War strategy, and animated adventure games have been skillfully blended for a unique computer gaming experience.
Follow in the footsteps of Frodo, Aaragorn and Gandalf as they battle to get the ring to the Cracks of Doom. Ranged against you are all the evil forces of the Dark Lork Sauron and the corrupt wizard Saruman. The odds are overwelming, but you cannot afford to fail. The destiny of Middle Earth lies in the balance.
Roam at will across the 36-screen scrolling map of Middle Earth, wherein are contained thousands of digitized locations in which you can control a cast of over 80 animated characters and armies. Test your strategic abilities as you command entire legions to move against the forces of evil.
With the almost infinite variety and multiple layers of play, War in Middle Earth is a game you can finish in days or weeks, or savor for months. It will delight and enthrall, and ultimately become a firm favorite in any software library.
May your heroic efforts be met with success, and the forces of darkness be vanquished!
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IBM PC, PS/2, Tandy 1000 (5-¼" CGA/EGA)
IBM PC, PS/2, Tandy 1000 (3-½" CGA/EGA)
IBM PS/2 (3-½" MCGA) • Amiga • Apple IIGS • Atari ST
SUGGESTED RETAIL: $49.99
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Unit G9, Costa Mesa,
CA 92627 · (714) 631-1001
MELBOURNE HOUSE
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MORDOR
GONDOR
ROHAN
DUNLAND
HARADWAITH

This allows you to create titles and logos over video of your products or services. Amiga genlocks are available in a range of prices, and in most cases cost is directly related to quality of video produced. At the high end of the market is the SuperGen ($750) from Digital Creations, which produces a high-quality signal good enough for many local TV stations. In the mid-range of the market is Progressive Peripherals' ProGen ($450), and at the low end is the AmiGen ($200) from Mimetics. (For a good hands-on guide to setting up a home-based Amiga video system, see "The Amiga Home Video Companion," in the September '88 issue of *AmigaWorld*, p. 40.)

Once you have your hardware set up, there is a wide variety of software available to help get your video production under way. Character generators create text you can place in the form of titling and other information onto video. JDK Images' Pro Video CG1 and Pro Video Plus are excellent character-generating programs (with the latter allowing IFF pictures to be used as backgrounds so that text can be overlaid). Aegis' Video Titler will also produce titles and effects, as will the combination of TV*Text and TV*Show (Zuma Group/Brown-Wagh). All of these programs can use IFF images from your paint program or digitizer.

For simple animation using IFF images, look into DeluxeVideo 1.2 from Electronic Arts. Both it and MovieSetter (Gold Disk) combine graphics and sound to produce animated sequences playable on the Amiga and recordable by your VCR. Also consider Antic Software's Zoetrope, which uses either 3-D objects, IFF images, or animation captured using A-Squared's Live! digitizer to create animation. With Zoetrope however, you cannot include sound with your animation. A similar problem exists with another Electronic Arts animated-video production tool—Deluxe Productions—which offers high-quality animation capabilities but no integrated sound.

Various companies also offer video clip art that may prove helpful in producing video sequences. Everything from video fonts to backdrops are currently available. A sampling of these disks might include Pro Video CG1 and Pro Video Plus Fonts Libraries (JDK Images), the Video Visions series (Charles Voner Designs), and the Zuma Fonts series (Zuma Group/Brown-Wagh).

For a descriptive guide to Amiga video software and hardware products, see "Videot's Delight," in the the March '88 issue of *AmigaWorld*, p. 22. Also, for information on additional Amiga products in all sections of this article, check *AmigaWorld*'s annual Buyer's Guides (Software: December '88, pp. 19–72; Hardware: March '89, pp. 32–46). ■

Bob Eller is a California environmental planner and a frequent contributor to Amiga magazines. Write to him c/o AmigaWorld, *Editorial Dept., 80 Elm St., Peterborough, NH 03458.*

Product Information

Aldus Guide to Basic Design
Aldus Corporation
411 First Ave. South
Seattle, WA 98104
206/622-5500
$6.95

AmiEmporium
American PeopleLink
800/524-0100 voice
Available via: Telenet, PC Pursuit, Tymnet

AmiGen
Mimetics Corporation
PO Box 1560
Cupertino, CA 95015
408/741-0117
$199.95

Analyze!
Micro-Systems Software
12798 West Forest Hill Blvd.
Suite 202
West Palm Beach, FL 33414
407/790-0770
$99.95

Animate 3D
Byte By Byte
Arboretum Plaza II
9442 Capitol of Texas Hwy. N.
Suite 150
Austin, TX 78759
512/267-3807
$149.95, Sculpt 3D: $99.95
One megabyte required.

Animation:Flipper
Hash Enterprises
2800 E. Evergreen
Vancouver, WA 98661
206/693-7443
$15.95

Art Companion
MicroSearch Inc.
9896 SW Freeways
Houston, TX 77074
713/988-2818
$29.95 each volume.

Art Pak I
Aegis Development
2210 Wilshire Blvd., Suite 277
Santa Monica, CA 90403
213/392-9972
$34.95

Art Parts, Volume I
Electronic Arts
1820 Gateway Dr.
San Mateo, CA 94404
415/621-8673
$29.95

Borders Font Set
Business Font Set
C Ltd
723 E. Skinner
Wichita, KS 67211
316/267-3807
$49.95 each set

Calligra Font Series
InterActive Softworks
2521 S. Vista Way
Suite 254
Carlsbad, CA 92008
619/434-5327
$46.25, $59.95, or $89.95

Choromap
Bassett Geographic
1103 Rudd Ave.
Auburn, AL 36830
205/887-9057
$48

City Desk 2.0
MicroSearch Inc.
see address above
$199.95

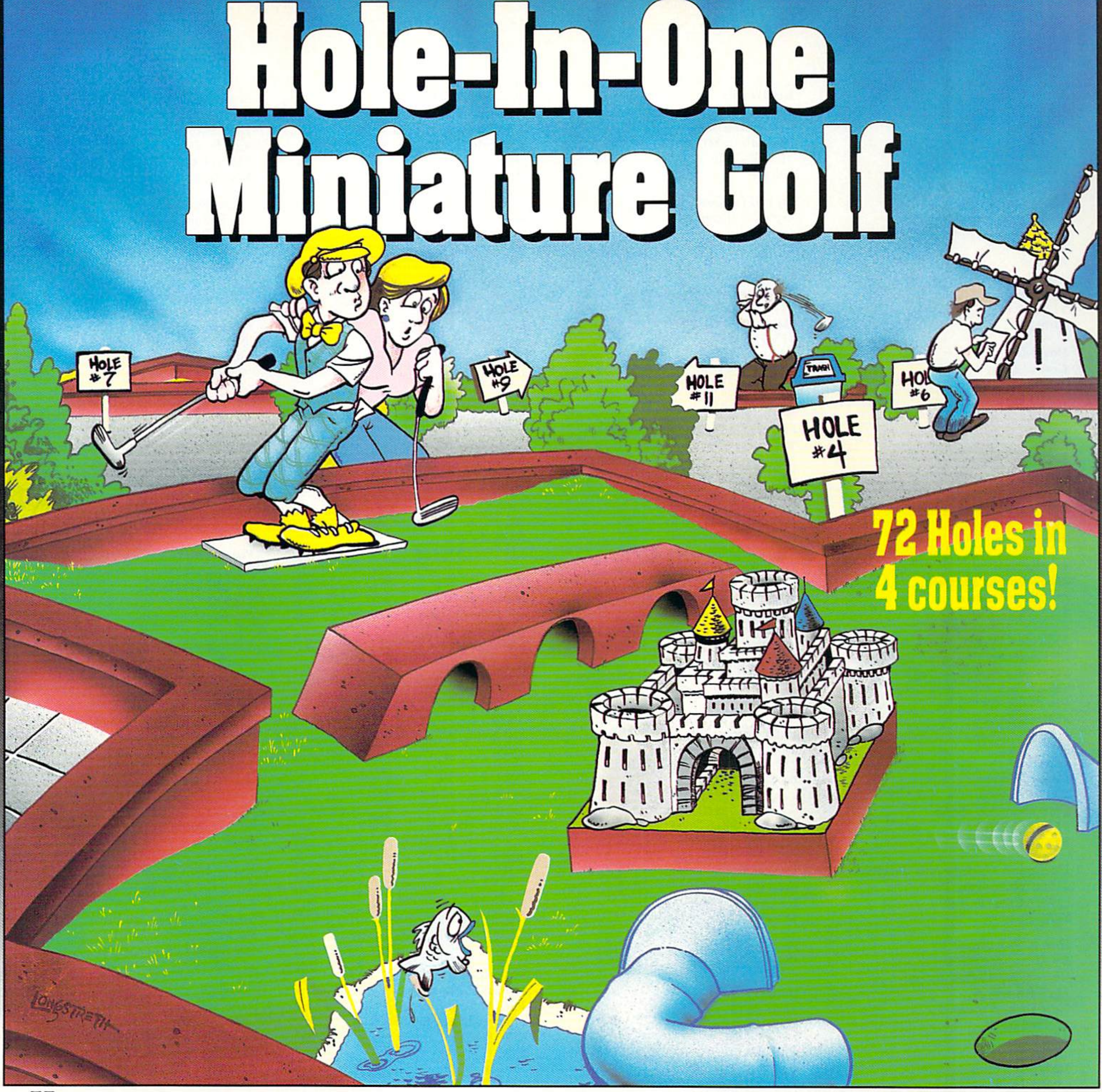
CompuServe (CIS)
800/848-8199 voice
Available via: CIS direct lines, Telenet, Tymnet

DeluxePaint II
Electronic Arts
see address above
$129.95

Deluxe PhotoLab
Electronic Arts
see address above
$149.95
One megabyte required.

Deluxe Productions
Electronic Arts
see address above
$199
One megabyte required.

DeluxeVideo 1.2
Electronic Arts
see address above
$129.95 ►

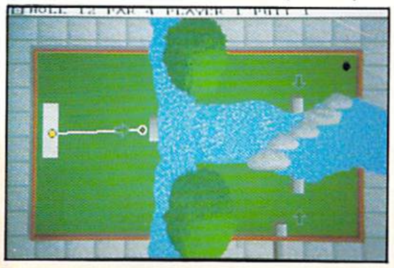


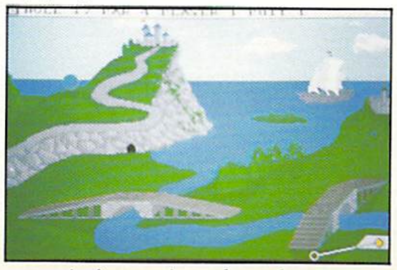
Hole-In-One Miniature Golf combines digitized sound, quality graphics and superior playability with realistic ball play to give you the best miniature golf game made!

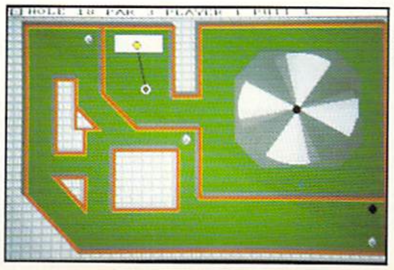
Utilizing the mouse (point and click) interface, DigiTek Software has created a game that will challenge adults yet is so simple to play that children can play as easily as adults from the very first game. This game supports up to 4 players making it one of the few games that the entire family really can enjoy together.

Hole-In-One Miniature Golf is 72 Holes of pure fun in 4 separate courses that give you classic miniature golf as well as hilarious fantasy holes. The digitized sounds of the crowd, the ball, and special effects all add to the fun and realism.

Another revolutionary game from the company that brought you Vampire's Empire, Amegas and Hollywood Poker— DigiTek Software!







Amiga versions shown here

DigiTek Software
104 West Seneca, Suite 4
Tampa, Florida 33612
(Programmers wanted—write us!)

Circle 97 on Reader Service card.

Design-3D
Gold Disk
PO Box 789, Streetsville
Mississauga, Ont.
Canada L5L 1X2
416/828-0913
800/387-8192 (U.S.)
$99.95
One megabyte required.

Digi-View
NewTek
115 W. Crane St.
Topeka, KS 66603
913/354-1146
$199.95

Dos-2-Dos
Central Coast Software
268 Bowie Dr.
Los Osos, CA 93402
805/528-4906
$55

Encore
Elipsys
PO Box 16757
Seattle, WA 98116-0757
206/938-0825
$69.95

excellence!
Micro-Systems Software
see address above
$299.95

Express Clip Art
PAR Software
distributed by Brown-Wagh
16795 Lark Ave., Suite 210
Los Gatos, CA 95030
401/395-3838
$29.95

Haicalc
Haitex Resources
208 Carrollton Park, Suite 1207
Carrollton, TX 75006
214/241-8030
$59.95

Hammond Photographic Services
11280 Washington Place
Culver City, CA 90230
213/390-3010

How to Spec Type
By Alexander White
Watson-Guptill Publications
1515 Broadway
New York, NY 10036
201/363-5679
$14.95

Imprint
Liquid Light
2301 W. 205th St., Suite 106
Torrance, CA 90501
213/618-0274
$495
Polaroid Palette required.

Invision
Elan Design
Box 31725
San Francisco, CA 94131
415/621-8673
$129
Live!, video source, and two disk drives required.

KindWords
The Disc Company
3135 South State St.
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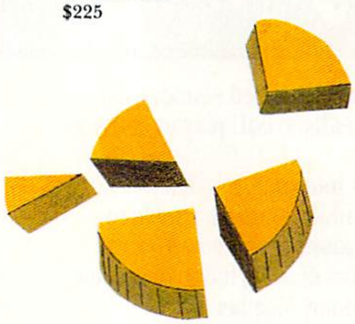
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E N O

WORKING THE "CON" ROUTINE

Don't let their simplicity con you—there's more than meets the eye when it comes to icons. Understanding how they work will give you more control over your system's resources.

ICONS ARE THE FOUNDATION of the Workbench-oriented, mouse-driven user interface that makes the Amiga so easy to operate. They are wonderful shortcuts to learning and typing AmigaDOS commands. Manipulating pictures is much easier and faster than trying to remember proper syntax and obscure abbreviations. You can grow so accustomed to shortcuts, however, that when something goes wrong (icon errors happen more frequently than you think), or when you want to perform more complex variations on standard operations, you may be left frustated and out in the cold.

The problem is that icons often work so smoothly and simply that they serve to isolate the user from an understanding of AmigaDOS. Learning how icons do their job—and how you can manipulate them—will give you more control over their use and, indeed, over the entire operating system.

Operations beyond the scope of clicking and dragging, such as creating a new icon, changing an existing one, or moving an icon from one disk to another and having it work properly, needlessly remain a mystery to many users. If you look beyond the icon's image to the engine driving it, you will find enough information to perform more complicated functions, still with a minimum of typing.

Can't Tell the Players Without A Program

Although there are several distinct types of icons, most represent files (collections of data or instructions) and directories (collections of files or directories). AmigaDOS stores graphics information for each icon in a file separate from the one containing information about the object it represents. For Workbench to recognize an icon, the icon file must have the same name as the file or directory it represents and end with the suffix .info. For example, Workbench will display an icon for a program file called Clock only if the icon file is called Clock.info and is located in the same directory as the program. (The only exception to the rule concerns Disk icons, which are always named Disk.info.) You cannot turn any file into an icon, however, simply by appending .info to it. A valid icon file must contain information about the object it represents, including the object type, image information, its position, window specifications, the default tool, and the tool types. ►

BY SHELDON LEEMON

ILLUSTRATED BY RANDY ENOS

The contents of the file or directory an icon represents determines its object type. A Disk icon represents the root, or main, directory of a disk, while Drawer icons represent subdirectories. Appropriately, a Garbage icon stands for a disk's Trashcan directory. For files, Tool icons represent those containing executable program code; Project icons represent those containing data. The rarely used Kick and Device icons accompany the Kickstart disk and peripheral devices, respectively.

An icon's image information is stored in an Amiga Gadget structure, which details the icon's normal (unselected) appearance, and its highlighted (selected) appearance.

An icon file contains the icon's X and Y position relative to the Workbench or the drawer in which it resides. AmigaDOS rewrites the position value when you choose Snapshot from the Workbench's Special menu. When the system creates an icon, it may have a position value of ICON_NO_POSITION, meaning the Workbench will place the icon in any empty spot in the window.

Workbench provides a way to display and change icon specifications.

When you double click a directory icon (Drawer, Disk, or Garbage type), it opens a window. The directory's .info file stores the new window's size and position, and so on.

When you double click a Project icon, or drag one Disk icon over another, the Workbench executes the program named as the default tool in the .info file. The default tool for a Disk icon is usually Sys:System/DISKCOPY—the DISKCOPY program executes when you drag one disk icon over another. A Project (data file) icon defaults to the tool (program) that created it. For example, a document file defaults to the word processor in which it was written. Note that when a Project icon executes a program, the information in the icon, not the tool, determines how the program executes. Prior to Workbench 1.3, a Project icon had to have a corresponding project file in order for the default tool to execute. Now, however, you can use a Project icon without an associated project file to start up a program.

Tool types is a text string used to pass environment information and startup commands to the program that the icon executes. The CLI icon, for example, uses a tool types string to determine the size and position of the CLI window that the program opens.

AVOID THE FLASHERS

If any of the required icon information is incomplete or inconsistent, the icon will not function. Instead, Workbench will flash the screen colors and display an error message in the title bar. The message is the key to the cause of the error. One possiblity is that the icon type specified in the .info file does not match the type of object the icon represents. If the Clock program's corresponding Clock.info file listed an icon type of Drawer, for example, double clicking on the icon would prompt the error message "This drawer is not really a directory." An error will occur also if a .info file does not have a corresponding object. For example, if you copy the Empty.info file from the root directory of the Workbench disk to another directory, but do not make a new directory there called Empty, the Workbench will report "This drawer cannot be opened" when you double click the icon. This problem generally arises from manipulating icon files from the CLI (or a directory utility program), instead of from the Workbench.

The most common kind of error occurs when the Workbench cannot execute the default tool named in a project's icon. If the named default tool is not an executable program file—a directory, for example—Workbench responds "Error while opening : 212" when you try to open the project. The number 212 stands for the AmigaDOS error "Object not of required type." Naming a default tool that is a data file, not an executable program file, results in error 121, "File is not an object module."

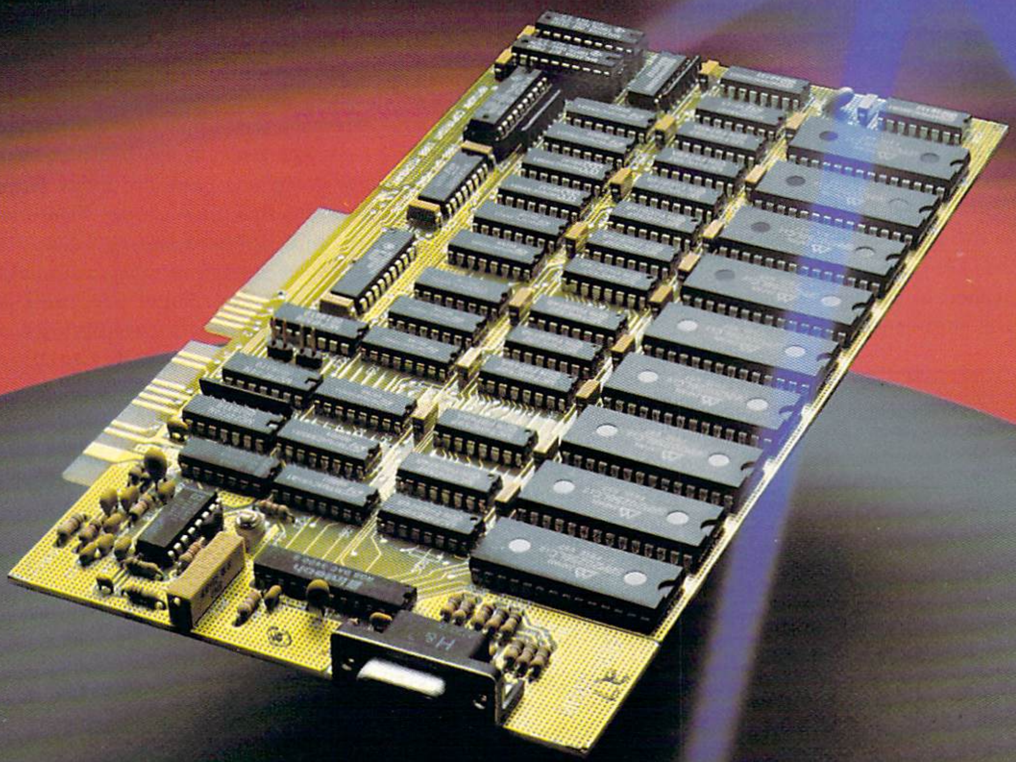
Frequently, the file whose name is specified does not exist, or is not located in the directory path given in the icon. For example, the project's icon could list the default tool as Woordpro, when the program is really named Wordpro, or it could use the pathname :Wordpro, when the Wordpro program is not in the root directory of the disk. In either case, double clicking the icon gives you an error message such as "Error while opening Wordpro : 205." AmigaDOS error number 205 is "Object not found," meaning the system could not locate the file in the specified directory. This problem often occurs when you transfer an icon from its original directory to a new one, such as from the manufacturer's disk to your hard disk.

A missing disk will cause errors, as well. The Project icon's default tool could contain the volume name of a disk that is not currently in the disk drive. For example, DeluxePaint II (Electronic Arts) creates Project icons for the picture files it saves. The icons' default tool is Dpaint:Dpaint, which refers to the program named Dpaint located in the root directory of a disk called Dpaint. If you drag one of these icons to another disk, it is possible that the volume named Dpaint will not be mounted when you double click the Project icon. If so, AmigaDOS will request "Please insert volume Dpaint in any drive." If you click on the requester's Cancel button, error message 218, "Device not mounted," appears.

INFO ON .INFO

Workbench does provide a way to display and change improper icon specifications. Click on an icon and highlight Info from the Workbench menu to see the ►

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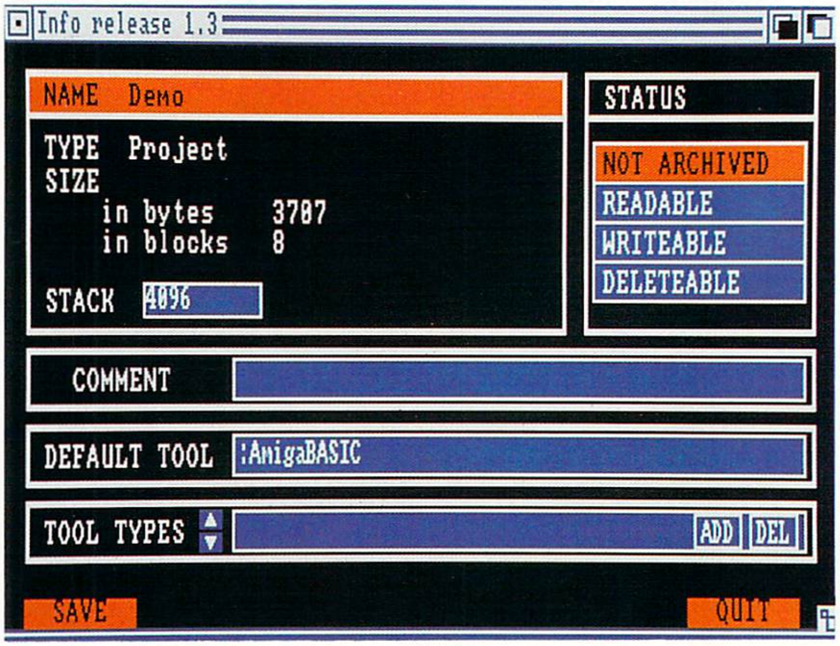
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icon information screen. Here you can edit the default tool, comment, tool types, and object size by clicking on the appropriate text box and entering your changes.

For Disk and Project icons, the default tool field names the program that the icon will run. To correct errors caused by moving a Project icon to a directory where AmigaDOS cannot find the default tool, edit the default tool field to reflect the program's new path.

The Comment field appears for all but Disk icons. Here you can enter a text string to explain the contents of the file or directory. This type of comment is the same as one created by the AmigaDOS FILENOTE command. Remember, the comment is attached to the object that the icon represents, not to the icon's own .info file.



Click on any icon, select Info from the Workbench menu, and you will have access to the Icon Information screen.

Displayed for all icon types, the tool types field stores information about a program's default conditions. For example, you can use the tool types string to tell the Notepad program what size window to open, which font to start with, and so on.

You can only partially edit the object size field, shown for disk and file objects. For disk objects, the display shows the total number of storage blocks on the disk, number of blocks used, the number of free blocks remaining, and the number of bytes per block. For file objects, the display shows the size of the file in bytes and blocks, and the stack size (the amount of working memory allocated for a program when it's run from the Workbench). A Project icon's stack size shows the amount of memory needed to run its default tool. You can change the stack size from the Icon information screen, but only if you know the program's actual stack requirements.

You will need some outside help to edit the remaining fields. To change the icon type, you must use IconEd or a public-domain utility program, such as Icontype. You must use the AmigaDOS PROTECT command to edit the Status field. For disk objects the field shows whether the disk is write protected. File and directory status fields show whether the object is Archived, Readable, Writable, or Deletable.

Many programs generate icons automatically for the data files that they create. These icons are particularly susceptible to failure, because the program has no way of determining the name of the directory in which it resides. These programs often use the volume name of their distribution disk as part of the path name. If you move such a program to another disk, your hard disk for example, all of the Project icons it creates will be wrong. The simplest solution is to use the AmigaDOS ASSIGN command to assign a logical device name to the directory in which these icons are stored. For example, WordPerfect (WordPerfect Corp.) Project icons use WP:wp as their default tool. If you store the WordPerfect program on your hard drive in the directory DH0:WP, then issue the CLI command ASSIGNWP: DH0:WP, the Project icons will find the WordPerfect program as expected.

A Change of Clothes

You can create icons from scratch or edit the imagery of existing ones with the IconEd program, located in Workbench 1.2's System drawer or the Tools drawer on the 1.3 Extras disk. The program loads IconEd's own Tool icon by default. To create or edit a different icon type (Disk, Drawer, Project, or Garbage), you must load an existing icon of the same type. To make a disk icon, for example, you would load the Disk.info file from one of your disks.

The quickest way to create an icon for an object without one is to load the icon for a similar type object and save it under a new name. For example, to create an icon for the Workbench's Libs directory, you could load the Empty.info Drawer icon and save it as Libs.info in the same directory as the Libs object. If you wish, you can change the icon's shape or color with IconEd's editing facilities. If the icon does not work correctly, make sure the icon information screen lists the proper default tool and directory path.

Creating a program icon from scratch is tricky because many programs are not written to run from icons. Some, such as the AmigaDOS COPY program, need command parameters, in this case the name of the file to be copied, that tell them what to do. Others, DIR for example, expect to use the CLI window for their output, and will fail if the default window is ►



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unavailable. In order to execute such programs from an icon, you must use the IconX program, located in Workbench 1.3's C directory (the public-domain program XIcon is similar). To use IconX, you first create a Project icon whose default tool is IconX. Then, create a text file of CLI commands and give it the same name as that of the icon. When you double click on the Project icon, it runs the IconX program, which opens a default window, and executes the commands in the text file. The text file might contain simply the name of the program, or it might include a list of commands that make logical device name assignments, execute interactive scripts, and so forth.

For a more animated Workbench display, you can create Action icons, which change their image when you click on them. IconMerge (in the Tools drawer of the Extras disk) will join two images into a single icon. The images must be the same size and in icon-file format.

You could rely soley on IconEd and IconMerge to create your icon images, but these tools have a number of limitations. With IconEd, for example, you must edit images a single pixel at a time, and you cannot edit graphics larger than 80 × 42 pixels. You could create a four-color medium-resolution IFF image on another program, but, unfortunately, IconEd could not import the file. Several public-domain programs let you work around the problem by converting four-color image clips (such as DeluxePaint II brushes) into icon files. I recommend Brush2Icon by Gregg Tavares and Iconlab by Hermes. Iconlab also lets you edit an icon's type, default tool, tool types, stack, and highlighting. It will even load in a second image to be used for highlighting.

Another pair of useful public-domain programs is Iconize and Recolor, both by Stephen Vermuelen. Recolor reduces the colors in a picture to your four Workbench colors, while Iconize shrinks the graphic from a full screen to a more suitable size for use as an icon. Together, the programs let you create icons for IFF picture files that resemble miniature versions of the original.

Clicking on icons lets you use your Amiga quickly and enjoyably, but learning how they are structured and what they do lets you use your Amiga more efficiently. If you understand the various types of icons and how to edit the information they hold, the transition from the point-and-click world of the Workbench to the larger, more powerful command-based world of AmigaDOS will be much simpler. ■

Sheldon Leemon is the author of Inside Amiga Graphics *and other books, and he is a frequent contributor to* AmigaWorld *and other computer publications. Write to him c/o* AmigaWorld, *Editorial Dept., 80 Elm St., Peterborough, NH 03458.*



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#4

An occasional series of tips, techniques, and tricks for creating more imaginative Amiga graphics.

By Joel Hagen

Graphics Tips Miscellany

IT SEEMS A GOOD time to bundle an assortment of practical graphics tips into one article. These are simple hints that can make life easier at the computer and help produce better graphics.

DO-IT-YOURSELF PALETTES

Few people beginning to explore painting on the Amiga spend enough time and thought on palettes. I am amazed at how many people begin painting using the default palette. Take advantage of the tools that adjust and spread the colors. The more familiar you are with these tools, the more spontaneous you can be in arranging a good palette. It is usually best to have "families" of colors—groups of several browns, several blues and several ochers, for example—each group ranging from dark to light. This allows for smooth contouring and shading of forms and can reduce "jaggies" on lower resolution images. Without these ranges, powerful tools such as DPaint's (Electronic Arts) Blend and Shade are nearly useless.

The most common problem I have seen in paintings done by beginners is over-saturation of color. Bright and gaudy colors may be quite appropriate for some pieces, but in most cases, a more subdued selection of colors will be effective. You can achieve this quite easily by simply lowering the saturation, the "s" slider for each color, in the palette tool. PIXmate's (Progressive Peripherals) color bias tool is excellent for adjusting colors, affecting an entire palette rather than just individual colors. Similarly, the fine color tool in Doug's Math Aquarium (Seven Seas) allows you to use the cursor to draw curves and slopes along the "graph" of the palette in each of the red, green, blue, hue, saturation, and value options. It is a quick and effective, and quite different, approach to palette adjustment.

Digitizing something can also be an excellent way to begin a palette. The colors and combinations are often surprising, and more subtle than palettes created from scratch. Once you create a palette, you can save it with a test screen showing groups of color combinations, as in the accompanying illustration. With disks filled with labeled palettes—such as "Earthtone 1–5," "Skintones," "Neon," and so forth—an artist can simply load such palettes into the paint package to begin a painting. You can save many palettes economically in a limited disk space by saving them as small (even single-pixel) brushes. In DPaint, loading a brush and then selecting "Use Brush Palette" will switch you to those colors.

DIFFERENT STROKES FOR ARTIST FOLKS AND OTHER GRAPHICS GOODIES

Interlace flicker can be annoying while working on a painting. Actually, most paintings do not flicker badly; the problem is usually the menu with its high-contrast colors. The obvious solution is to reduce the contrast between color zero and color one. Do not use black and white; instead, try black and medium gray, for example. If you do, life will be a lot easier. I often paint in lo-res interlace with DPaint. I have double the resolution of lo-res, but retain the 32-color palette.

Effective slides and prints can be shot from your monitor screen with a good

Sometimes it's the little things that make a big difference, as this grab bag of graphics tips and tidbits will demonstrate.

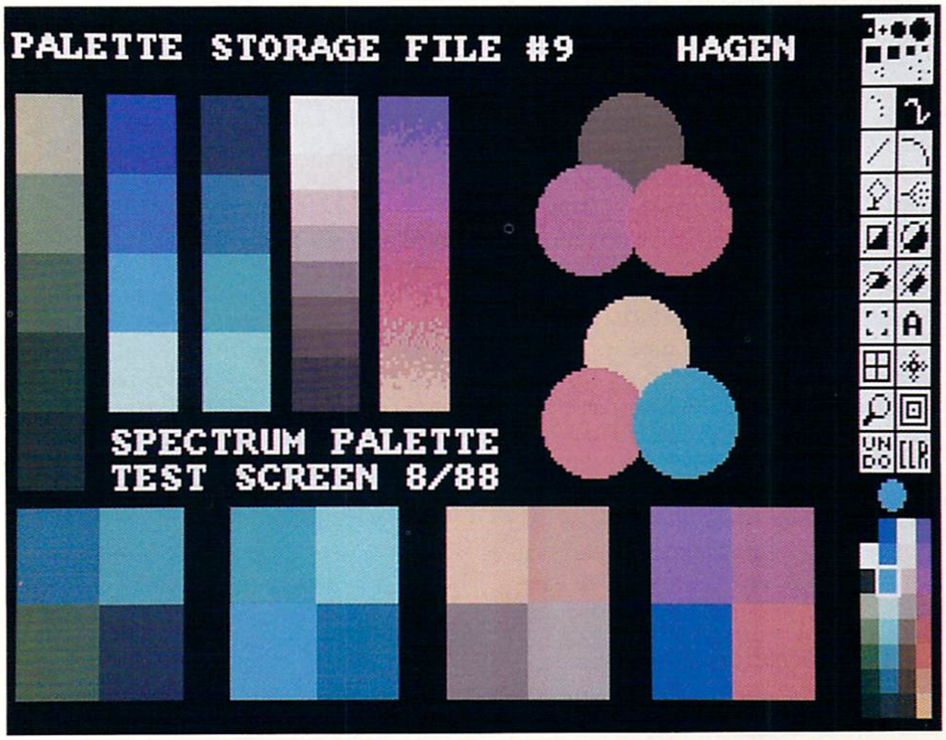
camera. Everyone has his or her favorite techniques for this. My hints are: long lens and brightness control. Using a long lens and tripod at a height level with the monitor will eliminate distortion. Set the monitor brightness control up fairly high and use the lens F-stop to adjust the exposure of the film down to proper balance. If monitor brightness is too low, dark colors will often be lost to the camera, even though they are clearly visible to the eye. With brightness up, all color information is available to the camera.

Although the mouse and the keyboard are the physical painting tools on the Amiga, the keyboard is usually neglected. The biggest single tip I could give a serious Amiga artist is to learn all the keyboard controls and to use them. In DPaint, most selection done with the mouse in the menu and tool bar can be done with keystrokes from the keyboard. More importantly, however, many operations possible from the keyboard, such as recentering a magnified image to the cursor position with the "n" key, cannot be done with the mouse. I do most of my work with the menu bars turned off (F10 key), keeping my left hand on the keyboard while my right hand operates the mouse. This greatly increases speed, flow, and spontaneity. The keystrokes I use most often are the comma (to pick a color from the screen), the period (to return to a single-pixel brush), the plus and minus keys (to enlarge or reduce any brush), and F1, F2, F4, F5, and F6 (to set the painting mode). You should always cover the keyboard when not in use to keep out dust and prevent keys from sticking.

Don't forget there is significant mouse control in Preferences on the Workbench. Many novice artists overlook setting the mouse speed, which can be critical to line control. At the fastest setting, there is virtually no fine control. I keep the setting at mid-range for most work and set it to slowest for very fine work. To see the dramatic difference these settings can make, try writing your name using each of the speed settings.

Doing some occasional mouse maintenance will also improve your work. Pop the retainer off the bottom and remove the ball. The three steel rollers in the mouse eventually become caked with dirt and cause a rough feel to mouse movement. The best way I have found to clean these rollers is with a cotton swab dipped in tape recorder head-cleaner. Also, if you find the commercial mouse pads too small, go to a diving shop and buy a piece of scuba suit material any size you like. Another "home-grown" option to the commercial mouse pad—and the one I like best—is to use a half-inch stack of fan-fold computer paper. It has a good feel, you can jot notes on it, and clean it by ripping off a sheet at a time. ■

Joel Hagen's credits include work in art, astronomy, science fiction, and software development. Write to him at 10512 Sawyer, Oakdale, CA 95361.



Saving your palettes to disk with a test screen showing groups of color combinations can get you off to a fast start when you load them into your paint program to begin a new painting.

SPRUCING UP THE OLD BENCH—2*

Picture Window

The new graphics-printing gadgets in Preferences' Graphic 2 window can help make your on-screen masterpieces look great on paper, too.

By Mark L. Van Name and Bill Catchings

**Editor's Note: This month, team* info.phile *presents Part 2 of their latest AmigaDOS 1.3 "mini-series." While their previous collection ("Exploring AmigaDOS 1.3," Aug. '88–Dec. '88) focused on new or improved CLI commands, this series explores the other side of the AmigaDOS coin: the Workbench.*

LAST ISSUE, WE discussed in detail most of AmigaDOS 1.3's changes and additions to Preferences. We skimmed lightly, however, over one area: the new graphics-printing gadgets in Preferences' Graphic 2 window. This time we'll focus on those new gadgets.

Open the Graphic 2 window and you'll see ten gadgets. Even though they're not grouped as such, these gadgets actually fall into three basic categories that let you control the following aspects of your printed images: placement, size, and basic appearance. Let's start with the easiest ones.

PUTTING THINGS IN PLACE . . .

The Left Offset and Center gadgets let you shift the image on the page. AmigaDOS normally prints images as wide as the printer can handle and as tall as they need to be to get the correct aspect ratio. (An image's aspect ratio is the ratio of its width and height. If that ratio is off, your image will show circles, for example, as ovals.)

The Left Offset gadget lets you set a left margin down to tenths of an inch; enter 0.5, and you'll get a half-inch left margin. The Center gadget centers the image on the page, but only in the horizontal direction. To control the height of the image, you have to use some of the size gadgets discussed below.

These two gadgets give conflicting instructions to AmigaDOS, so you can use only one of them at a time. Both are initially off. Set one, and Preferences automatically turns off the other.

. . . AND MAKING THEM FIT

Like the placement gadgets discussed above, the size-control gadgets also have some interdependencies. The heart of this group is the <–Limits gadget. It has five different settings that control how AmigaDOS interprets the Width Limit and Height Limit gadgets.

Its default setting is Ignore, which tells AmigaDOS to ignore Width Limit and Height Limit, and to print the picture the same size as it did in previous versions of AmigaDOS. When <–Limits is set to Ignore, Preferences won't even let you enter values in the Width Limit and Height Limit gadgets.

The other four <–Limits settings let you use the Width Limit and Height Limit gadgets. Set <– Limit to Bounded, and you can enter an image width and height, in inches, in those gadgets. Those measurements then become the largest possible size that AmigaDOS will print an image. If you want a picture no larger than four inches wide and six inches tall, for example, set <–Limits to Bounded, Width Limit to 4.0, and Height Limit to 6.0. This gadget lets you set the size of graphics images without messing up your default margins and other text settings.

The Absolute setting of <–Limits also lets you enter values in Width Limit and Height Limit, but it causes AmigaDOS to print images with exactly those dimensions. Using our example values above with the Absolute setting, you would get a picture exactly four inches wide and six inches tall. ►

Be careful how you use this setting, however, because it completely bypasses AmigaDOS' normal aspect ratio controls. With the wrong values, such as a square 4.0-inch Width Limit and 4.0-inch Height Limit, you can produce pictures with very distorted aspect ratios.

You can pick an absolute size for one dimension, however, and have AmigaDOS pick the other dimension so that the picture has the correct aspect ratio: Just leave the other dimension set to zero. For example, if you set Width Limit to 4.0 and Height Limit to 0.0, the picture will be exactly 4.0 inches wide, and AmigaDOS will make it tall enough to give it a correct aspect ratio.

The fourth possible <–Limits setting, Pixels, is a variant of the Absolute setting. It works just like Absolute, except that it interprets Width Limit and Height Limit as pixels, not inches. When you pick Pixels, the display in both Limit gadgets changes from "0.0 inches" to "0 pixels".

The final <–Limits setting, Multiply, is a bit different than the others. Rather than letting you pick a maximum or exact size for the picture, it lets you scale the picture. It makes AmigaDOS multiply the picture's width and height, in pixels, by the values in Width Limit and Height Limit, respectively. Again, AmigaDOS reminds you of this new interpretation by changing the display of those gadgets to "0 times". To triple the size of a 320-pixel by 200-pixel image, for example, set <–Limits to Multiply and enter 3 in both the Width Limit and Height Limit gadgets.

The Multiply setting also follows the same aspect ratio rules as Absolute. If you use it with one of the Width Limit and Height Limit gadgets set to a multiplication factor and the other set to zero, AmigaDOS will set the picture's latter dimension to a value that yields a correct aspect ratio.

There is another way to get AmigaDOS to alter a picture's size: the Scaling gadget. Scaling does not depend on the <–Limits gadget. It has two settings: Fraction and Integer.

If you set Scaling to Fraction, AmigaDOS will scale your image in the usual way. The image will fit on the printed page reasonably, and it will have a correct aspect ratio.

To take slightly more control of the scaling, set Scaling to Integer. AmigaDOS will then scale the width and height of the printed image to the nearest whole multiple of those two dimensions. For example, if you have a small image that is 160 pixels wide and 100 pixels high, Integer scaling will produce a picture some multiple of 160 pixels wide (160, 320, 480. . .) and a similar multiple of 100 pixels high.

As with so many of these options, however, Integer scaling bypasses AmigaDOS' normal aspect ratio controls. If you're not careful, you can end up with a printed image that has a distorted aspect ratio.

Good Looks

When it comes to graphics, appearance is everything. Several of the gadgets in the Graphic 2 window can help to give your images the look you want. One of the most useful of these is Density. Many graphics printers offer different levels of print density. The denser the print, the more like the screen the printed image usually looks, but at the cost of longer print times. By setting the density low for rough drafts, and then high for final output, you can cut down on print time. The Density gadget lets you pick a level from 1 to 7, with 1 the default.

The Color Correct gadget can also help you reproduce the screen more accurately on the printed page. It makes the colors on your printout more accurately match the colors of the original, on-screen image. It has three settings: R, G, and B. You can pick any or all of these settings. Pick one and AmigaDOS tries to correct the corresponding printed colors: R for reds, G for greens, and B for blues.

Color correction, however, has a price tag: It makes AmigaDOS take more time to prepare the image to print. It also costs you some of the colors you could otherwise print. Normally, AmigaDOS' printing device can handle all 4096 of the Amiga's possible on-screen colors, even though few printers can print that many. When you turn on color correction for a color, you lose 308 of the possible shades of that color in the quest for better color matches. Turn on all three, and the maximum possible printed colors drops to 3,172. That's not a big loss, however, since few printers can handle even that many colors.

While we're talking about colors and printers, it's worth noting that most color printers deal with only four basic colors, counting the blank white of the paper itself. Obviously, they must be doing something special to print more than those four colors. The Dithering device lets you control exactly how the printer "fakes" those extra colors.

Dithering is basically the use of a group of dots that are very close together and of different colors to simulate a new color. For example, a cluster of two red and two blue dots might look purple from any normal viewing distance. Dithering trades off print resolution for extra colors (or, similarly, extra shades of gray). Of course, the Dithering gadget works only when you're printing in color or with gray scales.

You can choose from three Dithering algorithms: Ordered, Halftone, and F-S (Floyd-Steinberg). The default is Ordered, and it's probably the right choice for most printers with a resolution of less than 150 dots per inch (dpi).

If your printer offers 150 dpi or more, you may want to try the other two options. The Halftone option tells AmigaDOS to use the same technique that most newspapers use to reproduce photographs and most comic books use to give the appearance of many colors. The F-S option uses a different, more expensive dithering algorithm. It can often produce the best colors, but at a cost of nearly double the print time. The F-S option also has another cost: You can't use both it and the final appearance gadget, Smoothing. If you set one of them, Preferences turns off the other.

The Smoothing gadget makes diagonal lines in the printed output look smoother than they normally would. Like F-S dithering, Smoothing is expensive; it, too, can double your print time.

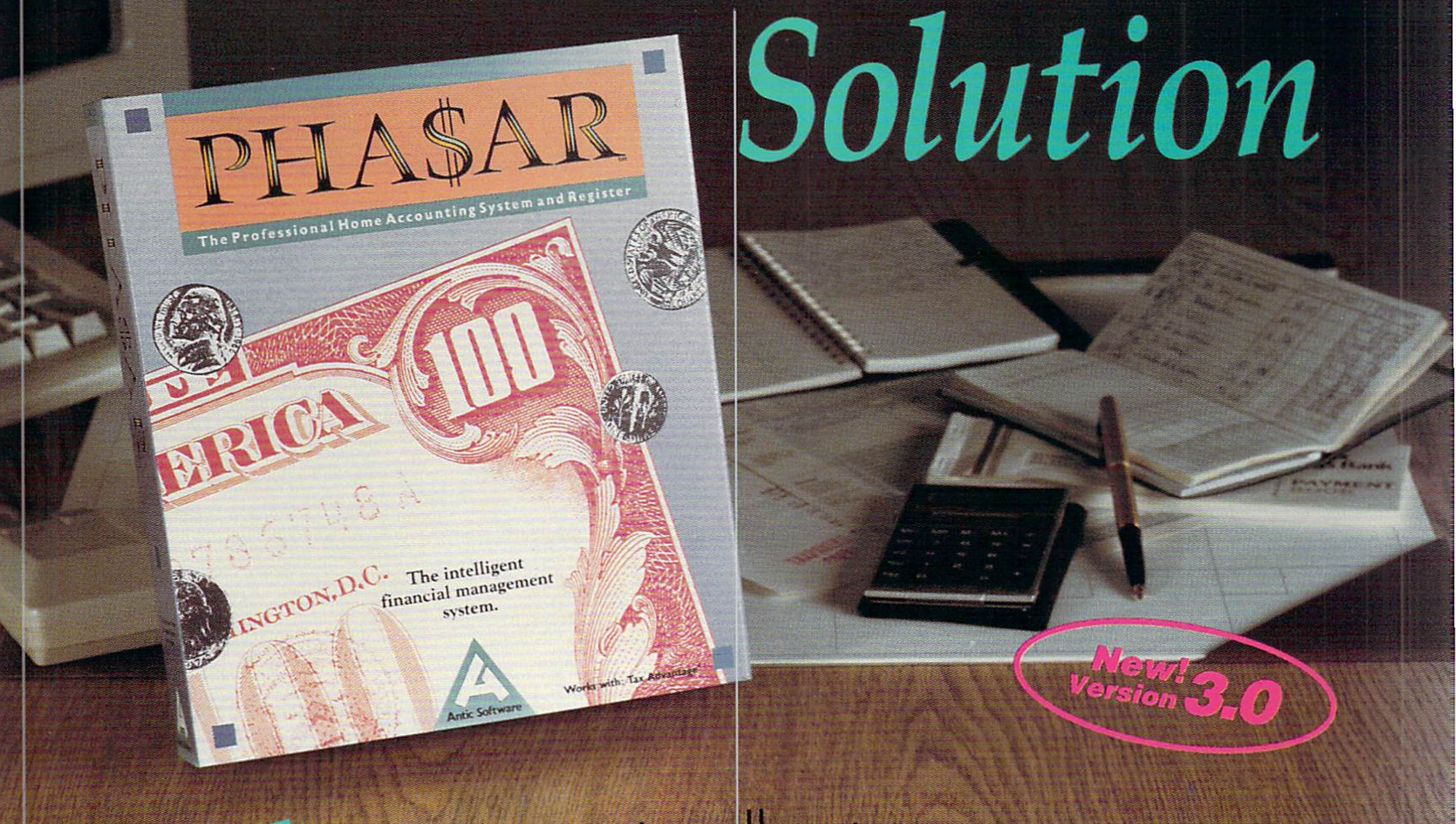
Pleasing Printouts

The effects of these new gadgets—particularly Dithering, Smoothing, and Color Correction—necessarily vary somewhat from printer to printer. Play with them on a few images, and you'll probably end up with much more pleasing output.

In the meantime, we'll get on to more of the improvements in Workbench 1.3, and bring them to you next month. ■

Mark L. Van Name and Bill Catchings are contributing editors to AmigaWorld. *Write to them at 10024 Sycamore Rd., Durham, NC 27703.*

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MM8AW-4

B.G. (Big Game) Hunter takes a shot at the best games, so you don't have to take a shot in the dark.

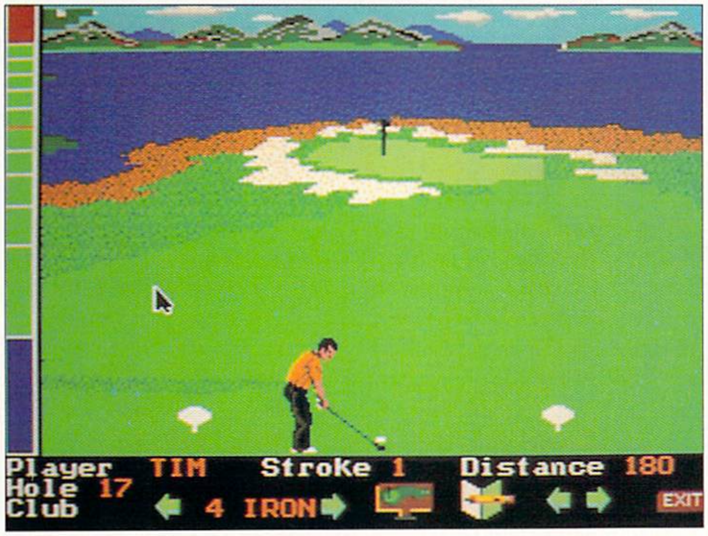
Swing Time

Down the dogleg to shoot birdies and eagles.

By B.G. Hunter

AFTER WRESTLING WITH some pretty dangerous games, I decided to tackle something less threatening—computer golf. Don't turn the page, grumbling I've sold out to the country club set. I don't like playing golf or wearing loud pants. That's the great thing about these games; you don't have to be a golfer to enjoy them.

The three available games (World Class Leader Board, World Tour Golf, and Mean 18) are very similar. They all let you play solo or against friends. They also let you select your skill level, to help even out the competition. We'll tee off with World Class Leader Board (WCLB, Access Software).



Lower your score and rest your feet with Mean 18.

World Class Leader Board

WCLB comes with four courses: St. Andrews, Doral Country Club, Cypress Creek, and the tough fantasy course, Gauntlet Country Club. If you get bored with these, the course architect program lets you design your own. Access also offers World Class Famous Course Disk #1 ($19.95), which contains four additional courses, and promises more will be available soon.

During the game, you look out at the course from behind your golfer. You can change the direction you're facing at any time, but WCLB will redraw the entire screen. You can also flip to an overhead view that shows you the ball's position relative to the hole.

Sight your goal, then pick a club. WCLB, like the others, tells you reasonable and accurate distances that each club will send the ball—as long as you hit it properly.

Of course, that's the hard part, just like in real golf. You start by holding down the left mouse button while a power bar rises. When the bar reaches the amount of power you want in your swing (usually ►



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full power), release the button. The bar then starts down. As it lowers, it passes a line. Click the left button when the top of the bar is even with the line, and the ball will travel straight ahead. Click early, and the ball will hook to the left; late, and it will slice right. The process moves fast, so you need a quick and steady hand. Make any mistake and you'll be rewarded with the sound of the ball splashing in water or bonking against a tree.

WCLB has the best graphics of the group. The trees and shrubs look real, although they all seem to be from the same cookie cutter. The game even includes a nice practice facility, complete with driving range and putting green. Overall, however, World Tour Golf (Electronic Arts) and Mean 18 (Accolade), leave WCLB in the rough.

World Tour Golf

On the surface, World Tour is a lot like WCLB, right down to the practice facilities and course architect. Its graphics are more arcade-like than WCLB's, but they're still pretty good. World Tour replaces WCLB's unmarked bar with a needle on a dial. Click the left mouse button once to start the needle moving, again when the needle reaches the desired power level, and a final time to get a straight shot.

One large improvement of World Tour over WCLB is the display. A split screen shows an overhead view to the left of the normal course view. With this dual display, you avoid flipping back and forth between the two views, a necessity in the other games.

Golf is filled with subtle sounds as well as sights, and World Tour has them all. Listen as the ball lands in sand or water, or hits a tree. Hear your swing and the crowd's reaction. Strangely, however, the crowd applauds or sighs at your score for the hole, not your putt. Your golfer even gets to respond, although only in a word balloon. (My golfer said "#?@%$" regularly.)

World Tour's biggest advantage is its many built-in courses, 24 in all. It has the usual ones, such as Augusta and Pebble Beach, but it also includes a few special ones, such as Fantasy and Goofy. Fantasy is incredibly hard, with water and sand everywhere, while the holes at Goofy form pictures. You won't run out of interesting courses for a long time.

Mean 18

My favorite is Mean 18. It may not have the most courses, the neatest features, or the best graphics, but it's the most fun, and fun is what I'm here for.

The game offers the usual: a course architect, practice facilities, an overhead view, and four courses—Pebble Beach, Augusta, St. Andrews, and Bush Hill. An additional course disk featuring three more courses is available for $19.95. The graphics are okay. When you get too close to the trees, however, they look like Picasso turned gardener.

The sound is wonderful, especially the sickening kerplop of the ball landing in water. You'll love the sigh of the crowd on a putt that rims out, and the thunderous applause for a 50-yard chip shot that goes in the cup.

Mean 18 also refreshes the screen more efficiently than the others. No more waiting while the game redraws everything. Mean 18 just scrolls the screen when you face another direction.

The stroking method in Mean 18 is similar to that in WCLB and World Tour. The improvement is that Mean 18 uses a bar the height of the screen, making it easier to retain fine control over the strength of your shot. ►

Product Information

Mean 18
Accolade
550 S. Winchester Blvd.
Suite 200
San Jose, CA 95128
408/296-8400
$44.95
$19.95 for Famous Course Disk: Volume II
No special requirements.

World Class Leader Board
Access Software
545 West 500 South
Bountiful, UT 84010
800/824-2549
$44.95
$19.95 for World Class Famous Course Disk #1
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World Tour Golf
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The biggest advantage of Mean 18, however, is a simple one: you can always get better. When you're learning with your score mired in the low 80s, you feel like you're only a game or two away from burning up the course.

Even if you don't like golf, Mean 18 is good for hours of fun. For the avid golfer, all three offer the frustration of real golf with none of the needless exercise.

Although not the type to be caged in an office, B. G. Hunter does skulk in occasionally to pick up his mail. Write to him c/o AmigaWorld, *Editorial Dept., 80 Elm St., Peterborough, NH 03458.*

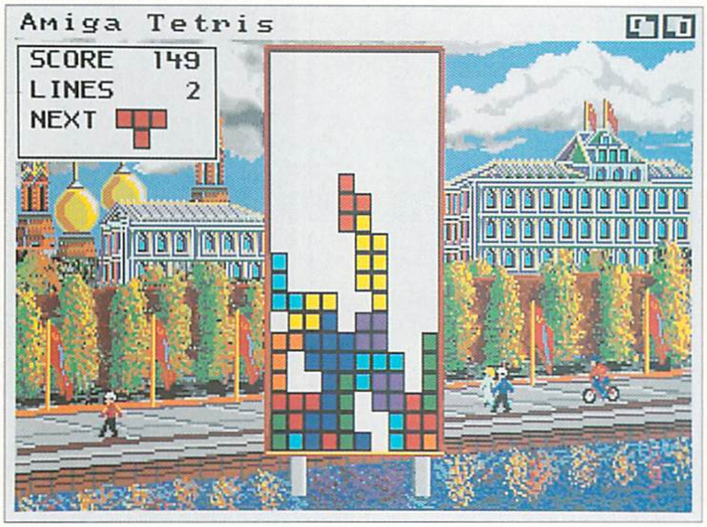
GAME REVIEWS

TETRIS

By Guy Wright

ONE OF THE first computer games to come out of the Soviet Union, Tetris is deceptively simple, easy to learn, very frustrating, and, as a result, highly addictive.

You start with an empty box. A shape composed of four squares falls from the top of the box. As it drops, you can rotate the shape or move it to the left and right using the keypad. As the six styles of shapes continue to fall, you try to piece together a solid line of squares across the box. Once completed, the line disappears, and the pieces piled above it drop down. As you complete and eliminate lines, the shapes fall faster. When the box fills with broken lines and the shapes have no room to fall, the game ends. Your score is based on how quickly you place the pieces.



Soviet blocks.

You can start on any of ten levels or with the box partially filled with random blocks. In advanced mode, the shapes fall twice as fast. In tournament mode, the shapes fall in the same sequence in successive games, so that up to six players can compete. High scores are saved on disk.

The Amiga version of Tetris is almost identical to its Macintosh, IBM, and Apple cousins. The graphics and sound are nothing special. The game is key-disk protected, which means you can make backups but you must insert the original disk when starting.

Tetris is a great game, combining quick thought and just a touch of arcade skill. It has that quiet magic that game developers are always striving for. You will play Tetris for a long, long time.

Tetris
Spectrum Holobyte
2061 Challenger Dr.
Alameda, CA 94501
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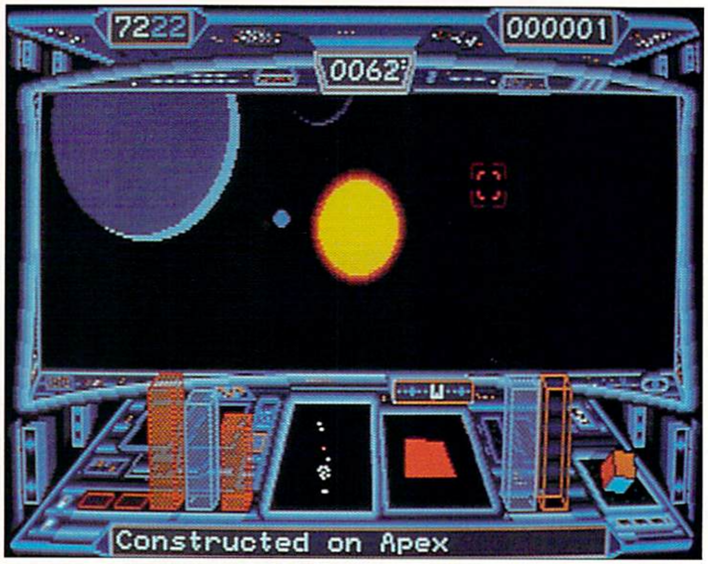
STARGLIDER II

By Dodson Yaple

THE ORIGINAL Starglider featured a fast screen refresh rate, wire-frame modeling with hidden-surface removal, some staggeringly inappropriate music, and an on-board computer with the voice of Margaret Thatcher. It also lacked spaceflight, a major liability in a spaceflight game. While Starglider II retains its predecessor's fast, flashy personality, Rainbird expanded the game into a solid-modeled universe glittering with excitement, detail, and flight.

Your mission is to rocket around outer space at top speed, fighting and blowing things up, until you've accumulated the skills and equipment needed to dispatch the dreaded Egrons. You control your ship (which handles more like a jet helicopter) with the mouse, monitoring the craft's vital signs by means of an agreeably gimmicky instrument panel that features nifty pseudo-holographic gauges. Though the laws of celestial mechanics are not always ►

strictly observed in the local star system, it is a big (five planets and nine moons) and varied place. From frantic laser duels with interstellar pirates to zooming through mysterious subsurface tunnels, Starglider II never lets up.



Solid scenery and gimmicky gadgetry.

The program's strongest point is its spectacular audio package. Beautifully rendered sounds emanate from most of the hundred-odd objects in the game. Rainbird also includes an audio cassette with an extended version of the theme music, leaving all four Amiga sound channels available to serve up the fearsome boom and roar central to this form of entertainment. Even so, in several late-night testing sessions, I was unable to generate a respectable score on the all-important Really Angry Neighbor benchmark.

The only drawback is the cumbersome save feature, which does not recognize AmigaDOS-formatted disks. Instead, when you try to save a game (or enter a high score), Starglider II offers to create a blank save disk with its own peculiar format. Early versions of the program do not implement this option properly; you must mail in your disk for a replacement. Because AmigaDOS will not reproduce Rainbird's format, the disk behaves as though it is copy-protected. You can't back it up or transfer its contents to a hard drive. Maddeningly, this has not deterred Rainbird from requiring that you type in a word from the voluminous documentation as copy protection.

Still, Starglider II is so good that it soars above these complaints; it's the game the original should have been.

Starglider II
Rainbird Software
distributed by Mediagenic
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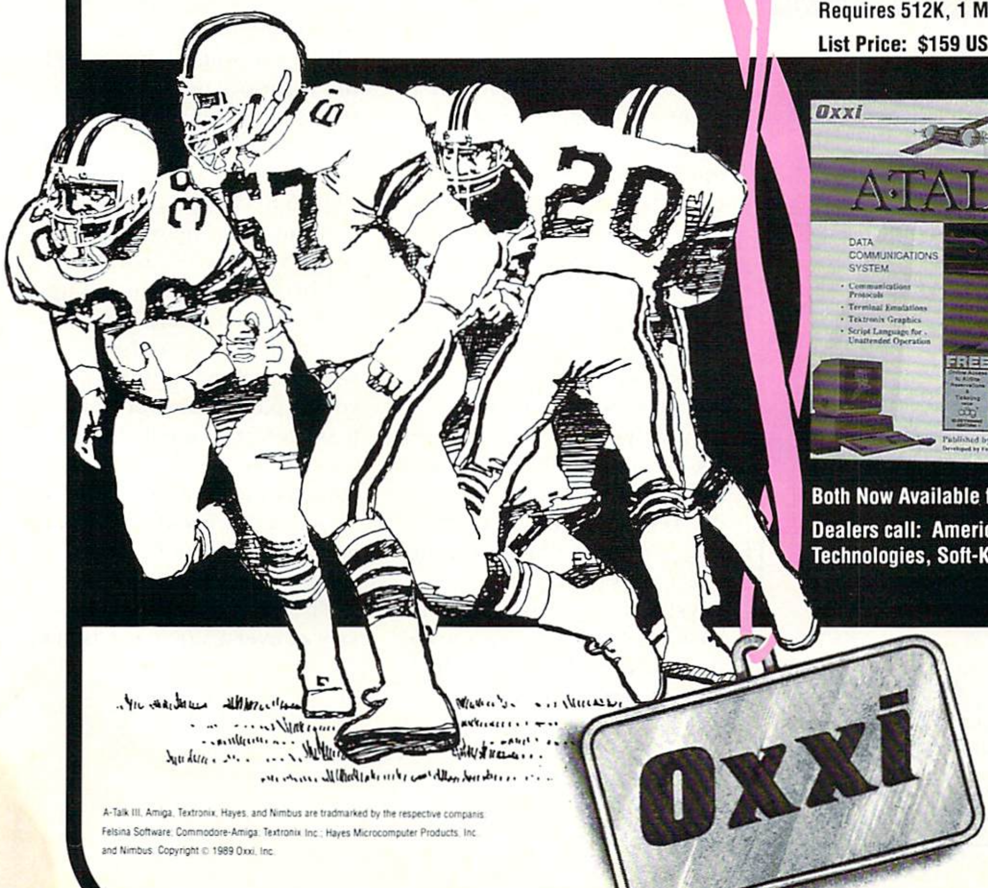
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Computer Scrabble

By Shawn Laflamme

CAN'T FIND ANYONE smart enough to play Scrabble with you? Or, do you need some practice to get even with a friend who's been beating you like a gong? In either case, level, you should be playing in tournaments, if you're not already.

The screen displays the game board with your rack of letters and the current scores.



Vocabulary and strategy are the keys to winning.

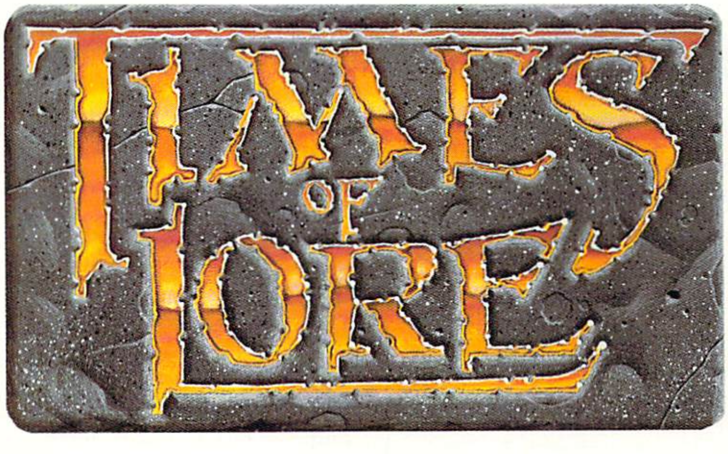
you can find a suitable opponent, and learn some nasty new words, with Leisure Genius' Computer Scrabble.

Computer Scrabble is faithful to Selchow & Righter's famous board game, in which players compete by forming interlocking words on the game board using letter tiles with various point values; the trick is to place your words strategically to garner the highest possible score, taking advantage of the bonus squares on the board.

Two to four people can play, or you can play against the computer, which can be assigned one of eight skill levels. Level 1, which accesses only part of the built-in dictionary, plays a lackluster game. Level 8 is merciless, almost invincible. It plays like a consortium of sadistic linguists. If you can win routinely on this

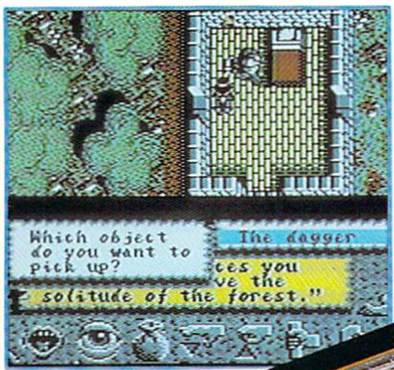
You enter the word you want to play from the keyboard and position it on the game board by clicking on the square where you want to begin and the appropriate direction (across or down). The program then displays your score for that word and gives you a chance to change your mind. You can try as many possibilities as you like. When you're finished, the program will update your score and give you new tiles to replace the ones you used. Menu options allow you to pass (when you can't make a word), juggle the letters in your rack, exchange your tiles for new ones, set a 30-second to five-minute time limit on turns, and save a game in progress.

The program has a vocabulary of over 23,000 words. The ►



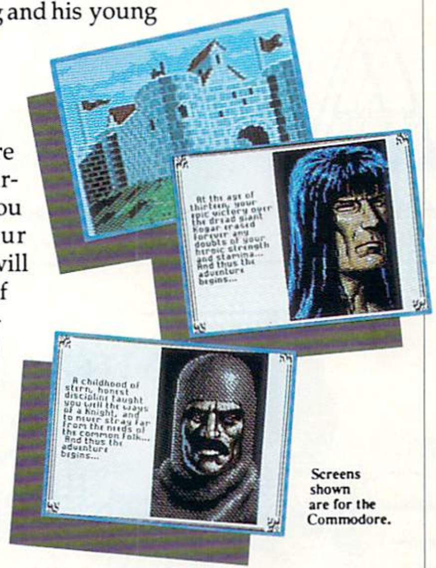
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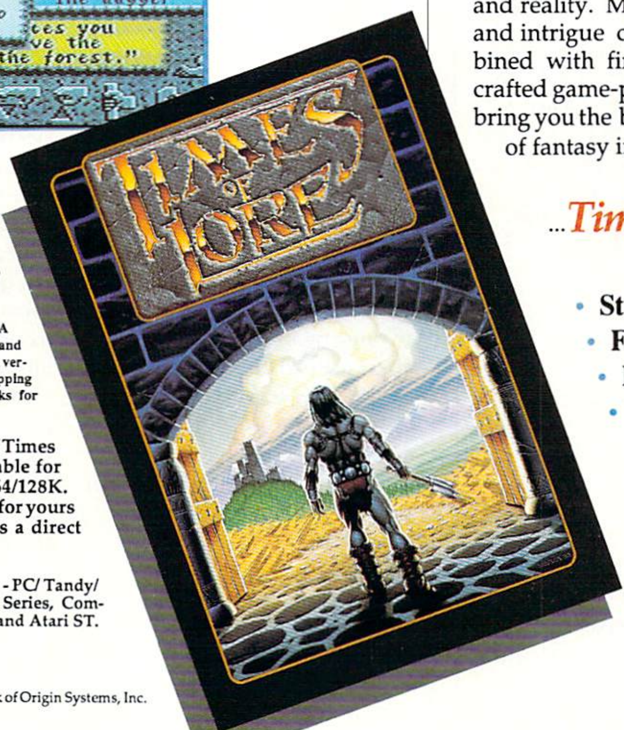
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Screens shown are for the Commodore.

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manual warns that "some of these words are obscure and unusual," and that's no lie. Try defining these, for example: azo, dere, eyen, ghi, haar, ka, oe, ogee, pul, topi, and zoril. Yes, these are all legitimate words, according to *The Official Scrabble Players Dictionary* (Pocket Books).

The program's vocabulary, however, still needs some work. It contains very obscure three- and four-letter words, but it does not recognize some very common five-, six-, and seven-letter words, such as: bugle, congeal, depart, foray, pebble, pivot, smear, theirs, and trooper. If you play a word that it doesn't recognize, it will challenge you, but fortunately you can reject the challenge.

The program will also play a nonword on occasion (I have yet to find ea, ismier, and wi in any dictionary), and you can't challenge any word that the computer plays—very frustrating when you're in the middle of a tight game.

I had a lot of fun with this game, but the big question is: Why should you shell out forty bucks for Computer Scrabble when you can get the board game for around ten? Aside from the novelty of playing an old favorite in a new way, the only advantage that Computer Scrabble has over the board game is that you can play against a computer opponent, who will cheat once in a while. If this is worth the extra thirty dollars to you, then you're an even bigger Scrabble fan than I am.

Computer Scrabble
Leisure Genius
distributed by Electronic Arts
1820 Gateway Dr.
San Mateo, CA 94404
415/571-7171
$39.95
No special requirements.

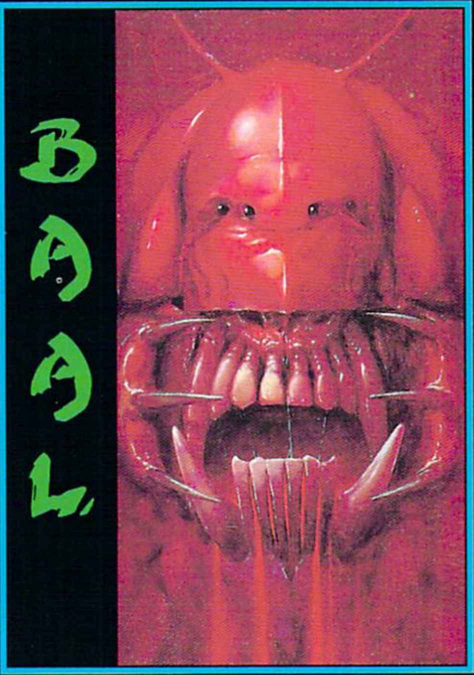
Dragon's Lair

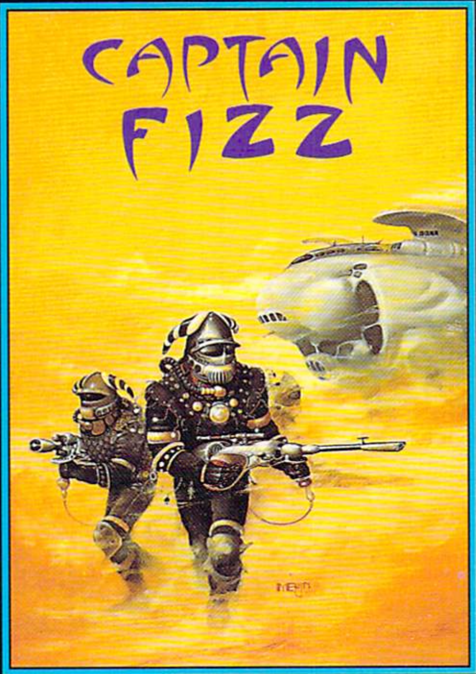
By Louis R. Wallace

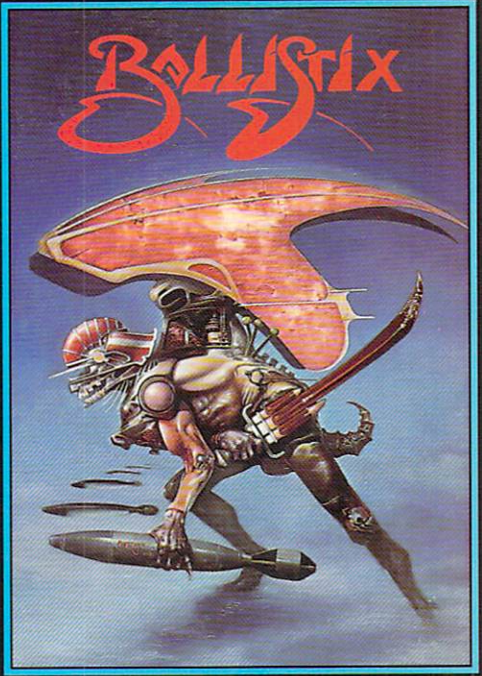
IN 1983, DRAGON'S Lair heralded a new generation in arcade games, using laser disc technology for enhanced sound and graphics. Digitizing graphics and sound directly from the laser disc and using advanced compression techniques, ReadySoft has brought Dragon's Lair to the Amiga.

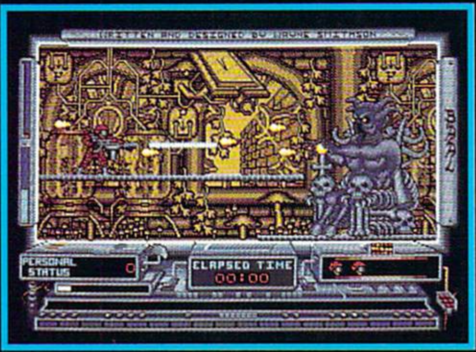
As Dirk the Daring, you must rescue the fair princess held captive by the evil dragon Singe. As you explore rooms in and under the castle, you must make choices about where to move, when to attack, and so on. Timing is the key in Dragon's Lair. You receive visual or audible clues, indicating when to make your decision. Press a key or move the joystick to indicate what you want Dirk to do. Select the proper move at the proper time, and Dirk continues on his quest. Selecting your action too soon or too late is as bad as not making any selection at all—either way, Dirk will die.

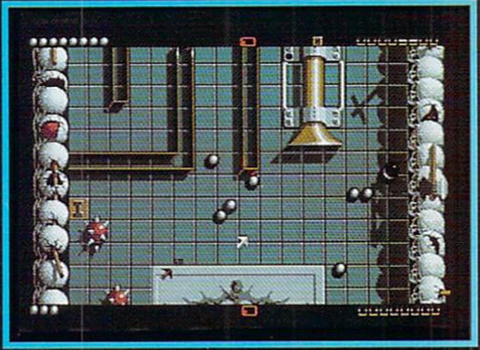
While the graphics, animations, and sound are excellent, the game itself is quite poor. It's similar to a multiple choice cartoon, in which you can pick the next scene. A lot of action takes place on screen, but it's all canned animation. The ►









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- ★ An addictive mixture of strategy and arcade action featuring:
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As leader of the ultimate battle fighters, your quest is to invade BAAL's domain, fighting off his monstrous demonic beasts to retrieve the War Machine . . . but . . . you must kill BAAL in the process.

Can you succeed? There is no option . . . the alternative is literally 'Hell on Earth'.

Screen Shots from the Atari ST version

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CAPTAIN FIZZ
Meets The Blaster-Trons

The message is simple: co-operate or die!

It's double fun and double trouble all the way in Captain Fizz, the most exciting simultaneous two-player game you and a friend are ever likely to play. It's a whole new world of split-screen, high-speed action, as both of you take on the nasty Blaster-Trons infesting the planet Icarus.

Yup, it's a tough mission alright, but you might just win out with the right blend of co-operation, courage, laser-hot reflexes, tactical sense. . . and brains. The action is fast and furious in Captain Fizz, but if you can't work out the right tactics you'll both be dead meat.

There are 22 levels of savage and relentless action to battle through before you reach your objective, the central computer that's causing the evil infestation. You'll never get there, though, unless you put your heads together and co-operate; your buddy can't do it on his own, and neither can you. This is one program where even the easy games are hard. So remember — united you stand, but divided you fall. . .

Warning: this game is impossible to beat on your own.

Two joysticks required for two-player game.

Screen shots taken from the Atari ST version

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BALLISTIX
Its a whole new ball game!

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The aim of the game is simple; score more goals than your opponent to win the match. Doing it is a different matter as **splitters** fill the screen with dozens of balls, **tunnels** hide them from view, **bumpers** bounce balls all over the show, fiendish **red arrows** speed them up to almost impossible velocity, **magnets** pull them away from your control, and much, much more.

Ballistix is incredibly flexible, too. You can play against the computer or another player, set the speed if you can't stand the pace, define where the balls are fired and their velocity, rack up bonuses that will get you extra goals and then, at the end of an exhausting game, set your name in pride of place on the high-score table. And it's all played to the accompaniment of a throbbing sound-track and a crowd that applauds your every goal.

Ballistix is definitely not a game for wimps. It's tough, fast, challenging and incredibly competitive - in fact, it's just the kind of game you like.

Two joysticks required for two-player game

Screen Shots are from the Amiga version

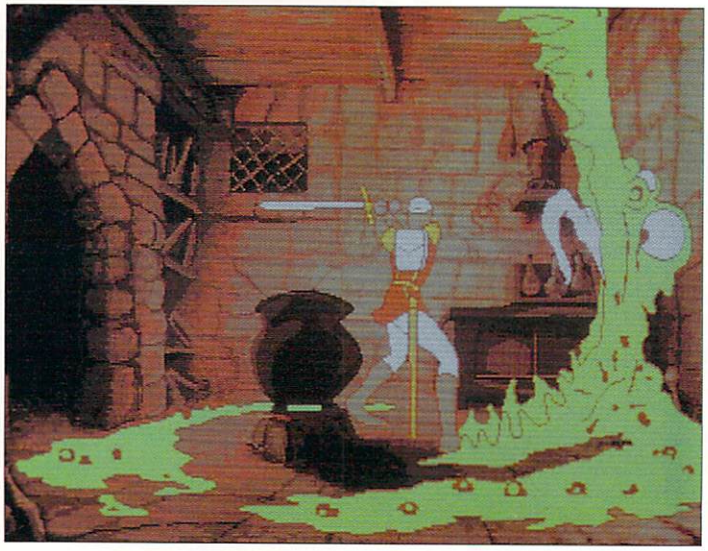
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PSYCLAPSE



Sword swallowing or Dirk swallowing?

number of actions you can choose for Dirk in each sequence is very limited.

As in the arcade version of Dragon's Lair, you can't save a game in progress or begin where you left off. When you use up Dirk's three lives, you must start over again at the beginning.

The entertainment value in Dragon's Lair is further hindered by constant disk loads and swaps among the six disks. Unless you have a Comspec hard-drive system, you cannot install the program on a hard disk to speed up the process. Extra RAM won't help either. The game does not take advantage of its environment, ignoring autoconfig RAM beyond the minimal requirements.

If you look beyond the frequent disk access, you come face to face with the bugs. On several occasions, the game crashed colorfully, but completely, and Dirk often left trails of himself as he moved. Worst of all, one of my disks developed an error that stopped the game and displayed a full screen alert instructing me to call ReadySoft. The onlt solution is to return the disks for replacements.

Dragon's Lair is a disappointment. The graphics, animation, and sound do justice to the original game; the problem is there isn't much game to play. Unless you are a Dragon's Lair fanatic, avoid it.

Dragon's Lair
ReadySoft
PO Box 1222
Lewiston, NY 14092
416/731-4175
$59.95
Joystick required.

Hole-In-One Miniature Golf

By David T. McClellan

IF YOU LIKE miniature golf, full of holes with crazy vectors and scenery and occasional oddball physics, Hole-In-One Miniature Golf is the game for you. Four courses come with Hole-In-One, along with a thorough tutorial, but you can buy additional course disks. My favorite course is the Me- ►

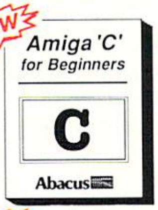
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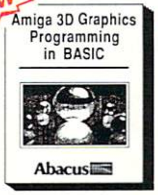
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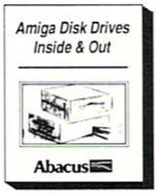
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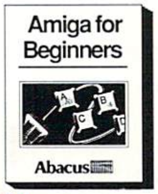
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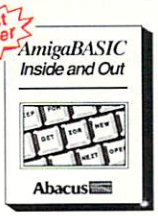


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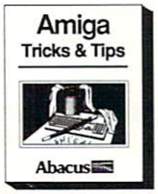
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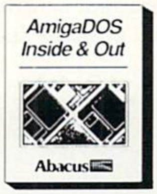
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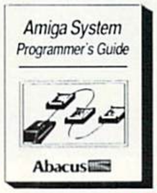
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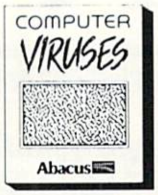
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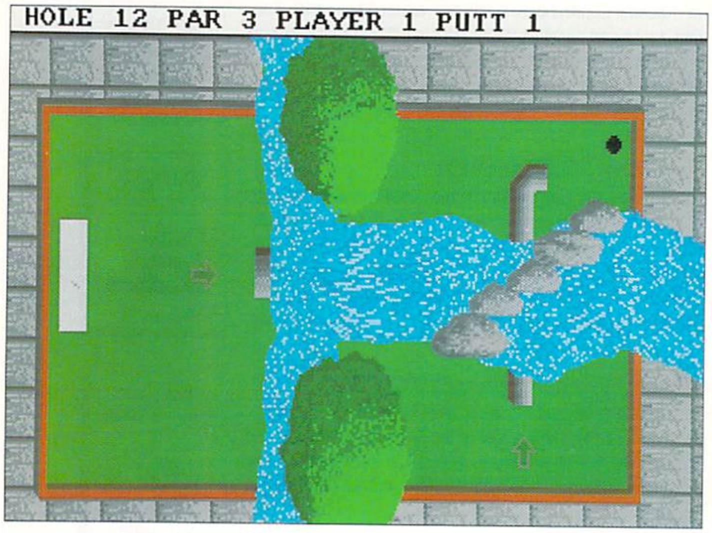
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nagerie, featuring fictional landscapes, such as a land of knights and dragons, Godzilla in Tokyo, and alien nations.

The individual holes range from easy to sadistic. You go over, around, and through bridges, '50s-style statues, pipes, teleport pads, moving obstacles, and sand and water traps. The scenery is funny and detailed, with hills and valleys shaded as on a terrain map. The sound effects are perfect.

I was impressed with the game's attention to details. The physics is reasonable and the holes are interesting. You view holes aerially, except for a few played in perspective, and there are plenty of visual clues as to terrain features. For holes contoured with hills, valleys, and pits, you can select alternate side views to see relative heights. Each hole has both a par and a stroke upper limit; if you hit the stroke limit you must move on.



Just putting around.

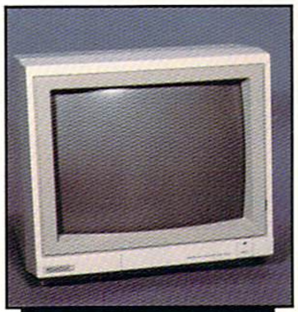
To play, you use the mouse to position the ball on the starting pad, then pull the aiming line away from the ball in the direction you want to drive. The longer you stretch the line, the faster the ball moves. To take your stroke, press the left mouse button. On some holes, you can make a hole-in-one (I love the sound effect), but on most you'll need to plan a sequence of shots to sink the ball. On easy courses I parred or better, on the expert course I often went to stroke limit.

You can play against three friends or solo. At any time, you can display the scoreboard to check on the competition. If you play alone, you can retry a stroke; the ball moves back to its previous position, and you try again. Successive retries return the ball to the tee. You can also redisplay a shot to see why the ball ended up where it did.

I like the game. It's good for rainy days or quiet evenings, and well worth the money.

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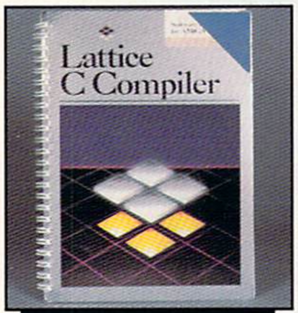
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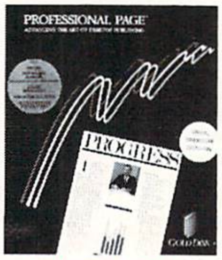
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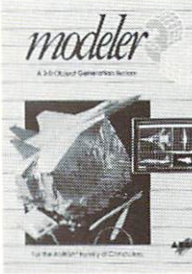


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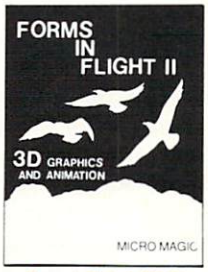
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Continued from p. 16

and the program becomes easy to work with. Before you get to that point, however, I must warn that the "oh no!" factor often comes into play. Impulse does seem committed to improving the software, and to extending the range of hardware on which it runs. The program's output capabilities are already as nice as Sculpt-Animate 4D's. If you don't want to invest in a more expensive animation package and are willing to spend a lot of time learning the program, Turbo Silver is a good choice.

Although Sculpt-Animate 4D is not so vast a departure from its predecessor as its price tag would indicate, it may be that the earlier package was priced too low. 4D is a good value. It is a polished product, and while Turbo Silver is stronger in terms of rendering, Sculpt-Animate is consistently stronger across the board—in object creation and animation as well.

Turbo Silver 3.0
Impulse Inc.
6860 Shingle Creek Pkwy. #110
Minneapolis, MN 55430
612/566-0221
800/328-0184
$199
No special requirements.

Sculpt-Animate 4D
Byte By Byte
Arboretum Plaza II
9442 Capitol of Texas Hwy. N.
Suite 150
Austin, TX 78759
512/343-4357
$499.95
No special requirements.

MAGELLAN

Expert-System software to get AI explorers through tough straits.

By Scott D. Palmer

IF YOU HAVE some background in artificial intelligence (AI) and are serious about developing expert systems, and have both time and patience, then Magellan from Emerald Intelligence may be for you. Someone just learning about AI and looking for a simple tool to get started might do better, however, to look elsewhere.

Magellan is a tool for creating expert systems, which attempt—by using sets of rules—to reproduce the knowledge of human experts. Magellan offers a rich array of features for the professional developer, including both forward and backward chaining, varying levels of certainty, graphics, and the ability to create "choice lists" from which the user can select with the Amiga's mouse.

Magellan is handicapped by inadequate documentation that makes it hard to learn, and by a clunky design that makes it hard to use. Even so, the power is there to create sophisticated expert systems with some unusual features.

EXPERT SYSTEM TOOLS

A computer-based expert system tries to simulate human reasoning by using the same sort of rules that a human expert would apply. Suppose, for example, that your printer won't work. An Amiga-based expert system, programmed with the knowledge of a human expert, might contain rules such as:

IF the printer does not work
AND the software has the correct printer driver
AND the printer is turned on
AND the printer is on line
AND the printer is not out of paper
THEN the printer cable is loose.

Based on rules such as these, both the human or the Amiga-based "expert" would ask you questions and make a diagnosis.

Magellan falls in the middle of the types of tools that can be used to create expert systems. At one end, there are programming languages, such as Prolog and Lisp, that give maximum flexibility but are complex and hard to learn. At the other end are very simple tools, called "expert-system shells," that are easy to learn and use, but have very limited power. Magellan has ease-of-use features, such as drop-down menus, but also has considerable power and flexibility.

CREATING A KNOWLEDGE BASE

The rules that form the basis of an expert system are called its "knowledge base." When you first start up the Magellan program, you are given the option of either loading an existing knowledge base or creating a new one. There is no theoretical limit on the number of rules in a Magellan knowledge base, if you have adequate memory in your system. The more rules Magellan has to look at, however, the slower it will perform. This applies to any expert-system tool.

To create a new rule in Magellan, you choose Create from the Rules menu. Magellan then displays an on-screen "Rule Build Window" that lets you create IF-THEN rules by filling in the blanks (see photo). In addition to blanks for the various parts of the rule, there are blanks for rule number and purpose, as well as for certainty values of various parts of the rule. You move from one blank to another by clicking the mouse on the blank you want to fill in.

Magellan lets you put fairly complicated statements in your knowledge base, dividing up each statement into object, attribute, and value. For example, you might say:

IF printer symptom is won't print
THEN possible cause is cable not tight.

In the IF clause, "printer" is the object, "symptom" is the attribute, and "won't print" is the value. Sometimes this gets a little weird: In the THEN clause, for example, the object is "possible" and the attribute is "cause."

You can add clauses to either the IF or the THEN parts of a rule by clicking on a connector box on the left side of the screen. IF clauses can be connected by "and" and "or," while THEN clauses can be connected only by "and." You delete an unwanted clause by clicking on its connector box and pressing the delete key.

IMPRESSIVE FEATURES

Particularly impressive is the fact that Magellan lets you assign varying degrees of certainty to your IF and THEN clauses. This enables your expert system to make decisions even when you are not quite sure of the facts. The certainty values of IF clauses are called "threshold" values. If the threshold value of an IF clause is .50, for example, the rule will not be used unless you are at least 50 percent sure that the IF clause is true.

By using the Cells menu after you ►

have created the rule, you can also enter legal values for a particular blank. The values will be displayed along the bottom of the screen when the rule is used, and you select a value by clicking on it with the mouse. This is more than just a convenience feature: An expert system will not understand your input unless it is typed exactly as it appears in the rules. Creating legal values is a way of making sure that typing mistakes do not lead to an erroneous conclusion.

By default, Magellan will assign the certainty values for you: 0.20 for IF clauses and 1.00 (completely certain) for THEN clauses. This is a great convenience except when you want to assign one or two of the values yourself. Then, Magellan simply overwrites anything you enter in the certainty boxes. If you want to enter any of the values yourself, then you must turn off the assignment feature and enter *all* the values yourself.

By inserting a Show command into a THEN clause, you can make your expert system display a picture whenever the THEN clause turns out to be true—for example, to show the position of a chip on the Amiga motherboard. Magellan can handle pictures in IFF format, and this feature works quite well.

Once you have created the rules for a knowledge base, you run the expert system by using Magellan's inference menu to choose either backward chaining, forward chaining, or "synergistic inference," which combines the two.

In backward chaining, you enter a "goal," which is a statement that you want Magellan to test against the rules in the knowledge base. If your goal can be deduced from rules in the knowledge base plus information that you supply, it will be certified as true. In forward chaining, on the other hand, you are simply asking Magellan to draw all the consequences of rules in the knowledge base.

Problems in Magellan

Magellan is a difficult program to master, partly because of its poor documentation and partly because of its unwieldy design. Though it nominally has an onscreen "help" feature, the help screens simply refer you to the appropriate pages of the manual, which itself is no model of clarity.

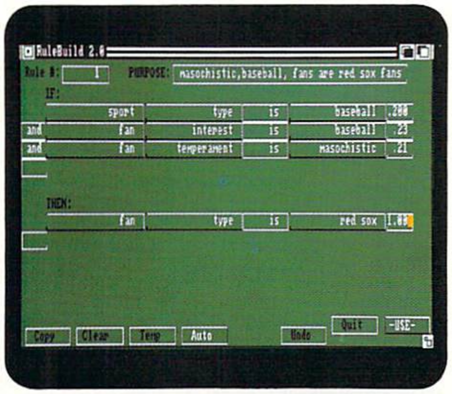
About variables, for example, the manual says that "a variable can be dynamically assigned into based on its component values as resolved in the inference process or present as a static value for use in other calculations." With an appropriate background in logic and computer science, you may or may not be able to figure out the meaning of such statements. After reading it several times, I *think* I know what it means, but I'm not sure. Numerous other features are hardly explained at all.

A problem typical of Magellan arises when you try to select a rule by using the Rules menu. Magellan divides the screen into an upper "control" window and a lower "dialog" window. To move between them move the mouse pointer into the window you want and click on it. When you choose Select Rule from the Rules menu, Magellan displays the knowledge base's first rule in the dialog window and prompts: "Y to select, <space> to continue, <CR> to quit."

If you want to look at the next rule, you press the space bar. Nothing hap-

pens, however, because Magellan does not automatically move you into the window where it is prompting you for a response. After you move into that window, you press the space bar again. Nothing happens. You eventually find in the manual that although Magellan prompts you to press the space bar, you also need to press <Enter>. The on-screen prompt is incorrect.

More serious is the fact that Magellan gives you no way to back out of operations that you start by mistake. You are



Magellan's on-screen "Rule Build Window" allows you to create and test IF-THEN rules such as the one proposed here that "masochistic baseball fans are Red Sox fans."

pretty much stuck with anything you start. What is worse, any commands you enter while trying to back out—such as Quit, Clear, or <CR>—are not ignored by Magellan, but go into a waiting queue. If you do manage to extricate yourself, those commands still have to be executed, one by one, because you cannot back out of them, either.

The fact that commands go into a waiting queue means that Magellan's on-screen help would be unavailable even if it existed: Help requests, like all other commands, will not be executed until the process on which you need help is over and done with.

A measure of the difficulty in using Magellan is that "Amiga Diagnostics," one of the program's sample knowledge bases, was set up incorrectly—by the very people who wrote the program and the documentation!

(In fairness to Emerald Intelligence, which was quite helpful in answering questions in the preparation of this review, the company has decided to address many of the problems in the original release. Admitting that "some things are a little bit lame in [version] 1.0," a company spokesperson promised "the problems would be cleared up in the next release of the product." Both the updated version (1.1) and an Interface Group Module were scheduled for release in March, and each was to have been demonstrated at the New York AmiExpo, March 3–5. Version 1.1 will be free to to registered 1.0 users, while the Module will be "retail priced under $100," according to the company. Improved 1.1 features are promised concerning file requesters, display windows, Rule Build windows, cells, inference functions, user interface, and numerics. The Interface Module will contain five macros, allowing import of file information into Magellan knowledge bases from SuperBase, Lotus 1-2-3 style spreadsheets, and ASCII text files, plus support of ARexx and the ability to access bulletin boards.)

AVAIL AND FAREWELL

Emerald Intelligence provides both telephone and bulletin board support for registered users of Magellan. Telephone support is available from 9AM–5PM (CST) Monday through Friday. The bulletin board is open from 6PM–8AM, Monday through Friday, and the company promises a 24-hour response time for questions left on the bulletin board. Neither the voice nor the BBS phone numbers are listed in the manual, but are sent to the user when the company receives a product registration card.

Technical support people were quite knowledgeable about Magellan, although they could not always answer questions because of the sheer complexity of the product.

Magellan is neither a toy nor a good learning program for the neophyte AI programmer. In spite of its problems, however, it offers power and flexibility that are easier and more accessible than they would be in an AI programming language such as Prolog.

Magellan
Emerald Intelligence
3915-A1 Research Park Drive
Ann Arbor, MI 48108
313/663-8757
$195
512K required. ►

InterFont

A font factory in 3-D.

By Wayland Strickland

DESIGNED TO TAKE the trouble out of creating text for use in 3-D modeling and animation, InterFont works in conjunction with its parent program, InterChange (both are by Syndesis), which allows you to transfer 3-D objects between popular modeling formats. The InterFont package includes InterChange (although InterChange owners can buy it without) and modules for sharing graphics with Sculpt 3D (Byte by Byte), VideoScape 3D, and Draw Plus (Aegis). Syndesis sells modules for use with Forms in Flight (Micro Magic) and Turbo Silver (Impulse) separately. The entire system is multitasking.

Finagling Fonts

Until now, creating 3-D text involved plotting each letter on graph paper and entering coordinates to render them on screen, or drawing them freehand in a modeling program. Assembling letters into words required that you adjust spacing, depth, height, and width manually. InterFont automates the entire process and thus saves considerable time.

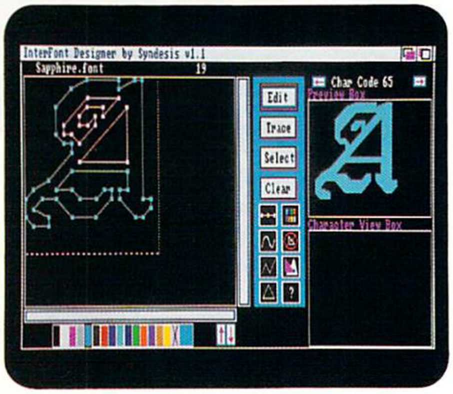
To load InterFont, you must first run InterChange. The package includes six fonts (All Caps, BWay, Gav, Space, Saph, and Helv-1) so that you can get started right away. With the InterFont Designer feature, however, you can create your own 3-D fonts using any bitmapped Amiga font as a template. Once you load the bitmapped prototype into memory, simply pressing any key on the keyboard causes the corresponding character to appear on screen (as long as your font set includes it) in an editing box. Using the mouse, you then trace the outline of the character. You can size and otherwise modify your creations, and store individual fonts in separate files for later use and editing.

The font-creation process may sound like a lot of work, but I was able to trace the entire alphabet in about four hours, a job that would normally take at least twice as long. Many features speed the process, including a snap grid and a complete set of point- and polygon-editing tools. You can transport these characters into any of the 3-D modeling programs that InterChange supports, and, in addition, you can use them with Professional Page (Gold Disk) by means of the Draw Plus module.

Typing Text

Once you have chosen a font—either a style you created or a ready-made one—you select an output format by loading the appropriate modeling-software module. You then load the InterFont Conversion module, which opens with a display of five blank lines. These lines accommodate your text; as you enter via the keyboard, characters appear in the specified style. To create a smooth appearance, InterFont supports splines by placing extra points and polygons along curved surfaces.

With gadgets, you assign attributes to



Make 3-D ABCs with Interfont Designer.

each line. You can choose between plain, bold, and italic print, determine line height and character width, and center your text or justify it right or left. Activating the Backsides gadget instructs InterFont to render the back face of the character, so that you can have a complete object for extrusion and animation. (Normally, the program saves time by drawing only the front.) To extrude characters, simply enter a value of extrusion—the program performs the operation. A kerning function aligns your characters and assures uniform spacing.

InterFont gives you a number of options for surface properties. Clicking the Texture gadget lets you cycle through Dull, Shiny, Mirror, Luminous, Glass, and Wireframe. Because these names do not necessarily match with the corresponding property in your 3-D program, the manual includes translations where appropriate; all 3-D programs do not ►

have equivalents for all these options, and vice versa. For example, InterFont does not support the smooth and flat chrome shading and the transparency features in VideoScape 2.0. In all cases, though, you can change textures after moving the text into your modeling program. While you cannot mix fonts on screen or enter more than five lines of text in the Conversion module, you can accomplish these tasks as well with your modeling software.

The clipping option cuts holes in letters such as A and O to let you see through to the background. Because such cuts are solid and are not visible in 3-D animation, normal mode (wherein the program superimposes a polygon on the letter) is the appropriate choice for this type of work. InterFont's settings function lets you store height, width, depth, and other specifications for later use.

I tested InterFont with all its modules and corresponding modeling software; the only complaint I can muster is that the many windows on screen sometimes make the work a bit confusing.

The manual is very comprehensive. It covers both InterChange and InterFont, and addresses just about every problem you could encounter in using the software. One section is comprised of examples that guide you through the creation of characters. You also get tips on using a genlock to trace fonts and a handy quick-reference card.

InterFont is a solid package that gives you endless potential for creating and using high-quality 3-D fonts.

InterFont
Syndesis
20 West St.
Wilmington, MA 01887
508/657-5585
$119.95
$79.95 for InterChange owners.
No special requirements.

Disk Mechanic

Pop the hood on your disks.

By C.W. Mann

A COLLECTION OF 15 utilities, Disk Mechanic is a complete disk toolkit. With these fast, compact programs you can get your disks in shape and work more efficiently.

Only five utilities—TuneUp, DoubleBack, DiskRepair, WorkShop, and Task—are represented by icons, but all 15 reside in the distribution disk's root directory, making them easy to find and copy.

TuneUp streamlines disk access by eliminating file fragmentation. It works on hard-drive, multiple-floppy, and single-floppy systems. TuneUp reads the files from scattered locations on a disk, clears space, and then rewrites the files to the cleared area in contiguous blocks. The result is dramatically faster disk-access, and a consequent reduction in drive gronking. TuneUp reorganized a factory-fresh, 98-percent-full word-processor disk in 6½ minutes, and cut the program's boot time in half.

DoubleBack, a hard-disk back-up utility, is as good as any other such program I have seen. Compatible with Workbench 1.3's FastFileSystem, the program allows complete control over back-up parameters, and accepts wildcards, time and date variables, string variables, and protection-bit conditionals. If DoubleBack finds a file too big to fit on the back-up disk, it splits the file, requests that you insert another blank disk, and moves on (you can later repair split files with the Splice utility). The backups it produces are totally AmigaDOS compatible, unlike those rendered by some other hard-drive utilities—you can access directories, print data files, and run programs directly from backups.

The powerful DiskRepair is similar to AmigaDOS' DISKDOCTOR. Based on your specifications (you can target a drive, work on particular files, and toggle between DOS and FastFileSystem modes), DiskRepair reads and attempts to salvage a disk's contents. It's fast, safe, and far superior to DISKDOCTOR in terms of interface and flexibility.

WorkShop is the best Amiga disk sector editor I have seen. The display lets you edit disk files, including program files, without fuss or squinting, and the manual's coverage of the utility and AmigaDOS file and disk structure takes the mystery out of the process. Work- ►

Shop resembles the public-domain program NewZap, but lets you move between related disk blocks quickly, follow disk-block pointers automatically, convert hex to decimal on screen, and follow individual files through Block and File modes via a toggle. A checksum indicator enables you to verify any block's validity.

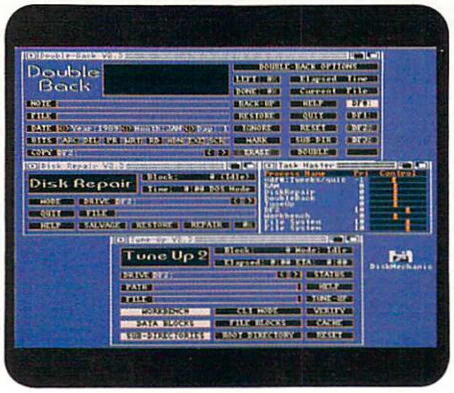
Task lets you access AmigaDOS's SetTaskPri (the task-priority control that requires CLI proficiency and ten keystrokes per attempt) from Workbench with a few mouse clicks. Task's dynamic range is a trifle limited—to a range of −32 to +31—for safety's sake (this prevents your inadvertently setting an often-called task to a priority that approaches single-tasking stature), but +32 is really all you should need. Task's window expands to reflect the number of active tasks in your system's current task table, thus you can run 20 programs simultaneously, with full control.

Off the Bench

MarkBad enables you to mark and exclude individual blocks from disks so you can avoid bad blocks and use damaged disks that you would discard otherwise.

With RTimer and BenchMark, you can perform accurate speed and performance tests on your system under various conditions. RTimer checks the execution time of Amiga programs, while BenchMark tests the speed of hardware configurations against a normalized index of 1.0 for an unadorned system.

The Clear and Blank utilities put used and unformatted floppies (respectively) in working order. You can completely format a blank disk in well under a minute, and erase a pre-formatted floppy in three seconds. On my non-SCSI Wedge (RSI Systems)-based system, Clear required me to specify the complete pathname before it would function, even when I placed Clear at the top of my system partition's directory structure and issued explicit PATH and ASSIGN commands. This quirk may be a deliberate safety constraint, however, as Clear could completely destroy a hard drive's contents if used carelessly.



Some utilities are accessible via Workbench.

Splice (an embellished version of the AmigaDOS JOIN command) and Cut let you quickly tie files and programs together or snip them apart.

Move works like the RENAME command to reposition files across subdirectory boundaries. Move is more flexible, though; it accepts wildcards and multiple file names, and does not require you to delete source files after a move.

The Find utility scours a disk—hard or floppy—in search of files containing any character pattern you specify. In Verbose mode, the utility reports a detailed description of each file it finds.

Finally, invoking BCheck gives you a display of any text in the virus-vulnerable boot block of your floppy disk. It is a lower-level utility than the public-domain VCheck, in that you must know what a valid boot block looks like in order to use it. It may be more useful, though, because new viruses cannot sneak past BCheck's visual display as they could through a rigidly defined automatic test.

On the Way

In my tests, every tool worked perfectly except TuneUp, which ran fine on uncorrupted disks, but caused the system to lock up when I tried it on an old data disk with bad blocks. Until Lake Forest Logic fixes the bug, you can run MarkBad over such a disk and salvage what you can with DiskRepair before organizing with TuneUp.

The manual is comprehensive, but jumbled. While the individual sections are clearly written and well organized internally, there is no discernible rhyme or ►

reason to the overall organization of topics. With the exception of one tool (WorkShop), none of the programs requires a knowledge of AmigaDOS to run—so why not present the programs first and save the discussions on boot blocks, hash tables, and such for the appendix? An easier to read type style would be appreciated, too.

Despite these minor complaints, Disk Mechanic is a fine bundle. If you use more than ten or fifteen floppy disks, or if you have a hard disk, you need Disk Mechanic. Maybe you won't use every tool in the package, but you will get your money's worth from what you do use. Best of all, Disk Mechanic's software affords you a path for growth, while its documentation serves as a knowledgeable, if sometimes poorly organized guide along that path.

Disk Mechanic
Lake Forest Logic
28101 E. Ballard Rd.
Lake Forest, IL 60045
312/816-6666
$89.95
No special requirements.

MovieSetter

A mover and shaker.

By Gary Ludwick

BILLED AS THE first WYSIWYG (what-you-see-is-what-you-get) animation package, MovieSetter combines tradition with innovation. This program integrates classic animation elements into a format that differentiates it from its predecessors.

MovieSetter comes on two noncopy-protected disks along with a very comprehensive, clearly-written manual. One disk contains the program, and the second is a collection of artwork, digitized sound effects, and other elements for use in the construction of animations.

Don't I Know You?

Your building blocks are faces (commonly called cells), backgrounds, sets, and tracks. A face is a single image of an animated object; a set is a series of faces that portrays animated action by following a logical sequence. A track determines horizontal or lateral movement. The bouncing and rotating action of the checkered Amiga ball is the result of a set of faces, each of which depicts a change in the ball's rotation, and a track that determines movement across the screen.

You can create faces and backgrounds with any IFF brushes or pictures. While there is no provision to avoid drawing each face individually, MovieSetter offers the next best thing: a set editor. The set editor lets you create succeeding faces in about a third of the time as the first, and with minimal effort. It contains most of the drawing tools found in paint programs, plus some animation-specific ones, such as rotation, flipping, and resizing tools. You can also cut, copy, and paste. A function called the Registration Mark lets you designate a portion of a face to remain constant throughout the set, so that succeeding faces automatically align.

MovieSetter allows complete flexibility of face placement and order, and repeating faces is easy. Backgrounds can scroll both vertically and horizontally to give the effect of motion while your object remains in place. VCR-type controls let you move ►

within the set as you create faces. The valuable Preview function is part of what constitutes the WYSIWYG capacity; it lets you check the quality of your animation in forward and backward modes quickly and easily while you work.

Happy Trails

Once you have assembled a set, you can define an object's horizontal and lateral movement on the screen with a track. You load your background and set, and the first face appears on screen attached to the cursor arrow. Simply position the cursor where you want the action to begin. Clicking the left mouse button places the first face, advances one frame and brings up the second face. Repeat this process to lay the entire track.

Each set of faces must have its own track; the number of tracks in a production is limited only by memory. Unlike most animation programs, MovieSetter



Step through faces using VCR-like tools.

has no script and no text file (the usual method for controlling sequence, timing, and other variables) that must be altered. A group of track-editing tools allow you to move tracks after you have laid them down, place them in front or in back of others, insert new elements, and copy, cut, and paste tracks via keyboard or mouse. Best of all, you can see the results of your editing at once.

MovieSetter offers full palette control for up to 32 colors, color cycling, an interlace/full-scan option for video transfer, speeds of one to 60 frames per second, plus clipboard and storyboard functions. Syncing digitized stereo sound with the video is again as easy as clicking a mouse button. MovieSetter provides not only stereo output for your soundtrack, but also channel-to-channel panning and the ability to change pitch as well.

It is difficult to find fault with MovieSetter. To mention that there is no choice of resolutions outside of an interlace toggle switch, no Extra_Halfbrite control, and only one transition effect (a wipe) is to nitpick. This is the animation program to have. Gold Disk has successfully combined important elements—IFF-compatible files, real-time previews, stereo sound, and a superb manual—into a powerful, flexible, easy-to-use package. Gold Disk even resisted the temptation to add copy protection. As they did with desktop publishing, Gold Disk has set a standard for Amiga animation.

MovieSetter
The Gold Disk
PO Box 789, Streetsville
Mississauga, Ont.
Canada L5L 1X2
416/828-0913
800/387-8192
$99.95
No special requirements.

Encore

Mouse macros and more.

By C.W. Mann

ENCORE RECORDS MOUSE and keyboard events exactly as you input them and lets you replay them by pressing a key combination or clicking an icon.

With Encore macros on your boot disk, you can open the disk's window, start the application, and set display parameters—all with one keystroke. With a bit more effort, you can precisely duplicate operations with your paint program, and give your low-priced word processor the keyboard macro features of its high-end competitiors. Logging on to your BBS can be painless when you have Encore's playback function wait for input before proceeding. You can automate business presentations with Amiga's synthesized speech and Encore's scrolling text, and demonstrate complex procedures with no chance of embarrassing yourself. You can even increase your chances of completing the Silly Race in

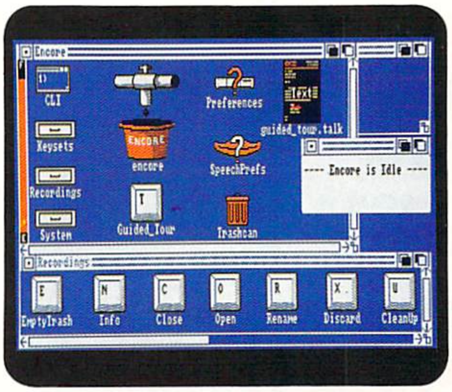
Electronic Arts' Marble Madness, for example, by creating macros to play the preceding game levels.

Encore's noncopy-protected disk is accompanied by function-key strips for both the A1000 and A500, and a 32-page spiral-bound manual. The disk contains three versions of Encore: Record/Playback (the full program, and the only version with which you can create macros), Playback Only (a subset containing mouse and keyboard functions), and Keyset Only (a smaller subset with keyboard functions only). After creating macros, you simply save them in a recordings directory on your Encore-equipped applications disk. Copying the appropriate version can save space on a disk and prevent an audience from tampering with an unattended automated presentation.

Say It Again

Encore sets a new standard for speech usage. The SpeechPrefs utility lets you enforce attributes (gender, inflection, pitch, sampling rate, and speed) on Encore speech script files, thus increasing the usefulness of Amiga speech. Blind users should know, however, that while it can plug holes, Encore by itself does not offer complete access to applications.

The manual is written in a conversational tone. True to its informal nature, the text suffers a little from awkward wording and questionable syntax. Although the table of contents listings do not always match the corresponding text headings, the text is fairly well organized. It starts by illustrating how Encore works and teaches you to create a simple mouse macro. The manual then guides you with relative smoothness through the complexities of creating scrolling-text and verbal-narration scripts. Elipsys also scatters its customer support number throughout the book. Notes and appendices present technical details for advanced users.



Do it again with Encore.

I encountered one glitch: When defining the first macro for a disk, the program gives you just three seconds to type in a name for your macro and press the Return key. I discovered that if you don't move fast enough, the program crashes. (You have unlimited time to name succeeding macros.)

In all other aspects, Encore appears solid. If you need a simple, low-cost presentation system, or a fast and easy way to make your Amiga do exactly the same thing time after time, Encore is it.

Encore
Elipsys
PO Box 16757
Seattle, WA 98116-0757
206/938-0825
$69.95
No special requirements. ■

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This month's selections—

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SE 27 Amoeba Invaders
An Amiga version of Space Invaders, this is a great game to play while swilling down a couple of beers with your old college buddies. Best thing is you'll never run out of quarters.

SE 116 Business II
Features VC-Spreadsheet and an HP-10c calculator emulation. And of course it includes some less "business-like" items.

SE 119 mCAD
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Sorry, Vanna is not included, but you do get a great computer version of the hottest game on TV! Also on the disk is Reversi, a talking Othello clone.

SE 128 Space Games
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SE 131 Packman '87
You haven't played Pac-Man until you've played Packman '87. A must for serious joystick junkies.

SE 134 Applications I
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SE 139 Bull Run
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SE 146 Calendar
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SE 151 4-in-a-Row
Try to beat the computer in this fun and challenging game; sort of a tic-tac-toe for the Future Shock generation.

From DevWare:

DW 9 JayMiner Slides
Features 17 hi-res IFF pictures drawn by Amiga designer Jay Miner that show the internals of the Amiga.

DW 25 BlitLab1.2
See exactly how the blitter works with this improved version of BlitLab. Included are a C language file requester, an IFF reader, and graphics programs.

DW 26 StructBrowser
This valuable learning tool lets you explore Intuition structures. Also included are DiskX, a program that lets you explore floppy disks, and Spool1.2, a print-spooling program.

DW 28 AudioTools2
Rob Peck's subroutines for controlling the audio device. Also on this disk are over 20 other helpful utilities such as PopUp, WindowUtil, MemClear, and 3DTerrain.

DW 31 ARP
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FF 97 Juggler
Every Amiga user should have this HAM animation by Eric Graham. Also included are a function plotter, a text-reading program, and more.

FF 164 DiskSalv
An updated version of the most popular Amiga file-recovery program. Also included are Zoo, an alternative to Arc, NewZap, a disk-zap utility, and more.

Note that the entire Fred Fish collection is available from SystemEyes and the AmigaWorld Public Domain Library.

From Chiron Conceptions:

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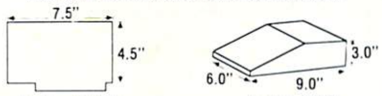
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Then the AmiKit is for you! It includes an informative 160 page book to help you start using the Workbench, the CLI, and a modem; two disks containing powerful public domain programs such as wordprocessor, a communications program, a spreadsheet, a database, disk utilities; a third disk contains the latest, official version of the Workbench.

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Circle 132 on Reader Service card.

WHAT'S NEW?

While taking cover from those April showers,

take a look at what's in store for you.

Compiled by Jan Jackson

To Scan or not to Scan

SCAN THESE ITEMS. ASDG's **ScanLab/100** includes a Sharp JX-100 hand-held scanner and everything you need to link it to your Amiga. The package comes with color processing capabilities and virtual memory and retails for $995. For more information, contact ASDG, 925 Stewart St., Madison, WI 53713, 608/273-6585. Reader service number 512.

Gold Disk Inc. has developed a hardware/software interface for the Canon IX12, black-and-white scanner. You can use this package to save images as black-and-white IFF files at 75, 150, 200, or 300 dots per inch and define regions of scanned pages for high-resolution by software control. The package retails at $1095 from Gold Disk, PO Box 789, Streetsville, Mississauga, Ont., Canada L5M 2C2, 416/828-0913. Reader service number 513.



Big impressions from Gold Disk and Canon.

Throttle that Thug

ERADICATE A RUTHLESS crime family as a member of The Enforcers, an elite crime fighting unit. **Technocop** features 11 levels. You scan the screen and find the location of the crime, the time remaining to reach the scene, and whether the felon should be eliminated or taken alive. Your opponent is equipped with the most sophisticated weaponry of the 21st century, including a high-powered radar detector, a computer wristwatch, an .88 magnum, and a net gun. The Enforcers must take down pushers, kidnappers, hit men and thugs, or die trying. Technocop is a U.S. Gold product and retails for $49.95. Get more information from Epyx, 600 Galveston Dr., PO Box 8020, Redwood City, CA 94063, 415/366-0606. Reader service number 516.

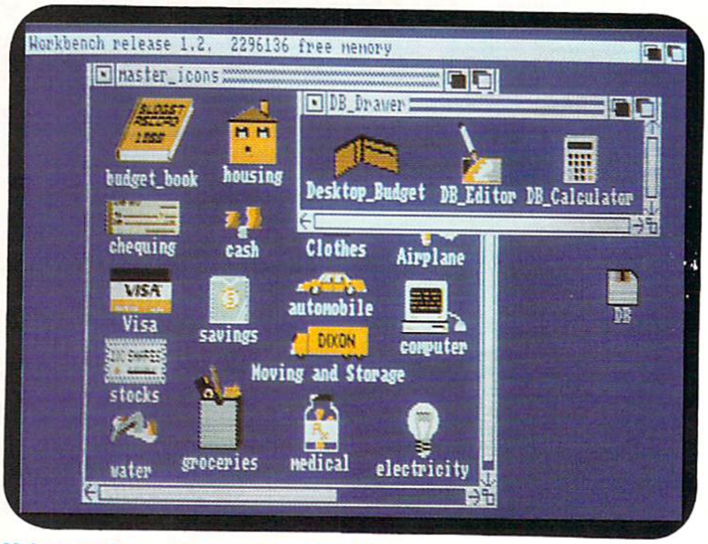
Plots and Designs

ULTRA DESIGN, A high-end CAD system, features auto-dimensioning with configurable parameters to suit any standard. You can select between real-world units, metric or English and choose screen coloring by pen style, group, or layer. You can also define view ports and points for easy movement within each drawing. Constructional aids include definable grid markings at two levels, grid snap, seek object, end point, middle point, and center of ellipse. Ultra Design's clipboard modifications include clone, rotate, scale, drag, flip X, flip Y, and kill. You can move clips into the current group, layer, or pen style. Ultra Design is equipped with a pasteup system for the output of several individual drawings in one operation. The pasteup system supports pen plotters and 1.3 Preferences for printer drivers. The program retails at $299.95. For more information, contact Progressive Peripherals & Software, 464 Kalamath St., Denver, CO 80204, 303/825-4144. Reader service number 515. ►

Homework

THERE'S NO NEED to burn the midnight oil unraveling financial records, says Gold Disk. With **Desktop Budget**, the first of a new home office series, you can set up a payment schedule and let the program perform month-end reconciliations. For $69.95 you get a calculator and an icon editor to create symbols representing your own bills. Reader service number 501.

Transcript, a word processor designed for speed, is meant to work with files from 5K to 500K without placing excessive demands on memory. Transpell, a 90,000-word spelling checker, is included and can work alongside Transcript or stand alone. Transcript retails at $69.95. Get details on Desktop Budget and Transcript from Gold Disk, PO Box 789, Streetsville, Mississauga, Ont., Canada, L5M 2C2, 416/828-0913, 800/387-8192 (U.S.). Reader service number 502.



Make your home finances picture perfect.

Well Rounded

BECAUSE THE AMIGA displays curves differently than other personal computers, translating files from non-Amiga CAD packages has in the past been a problem. Now with **ACAD Translator** you can transform .DFX files into Sculpt-Animate (Byte by Byte) format, then graphically display CAD data as shaded 3D or ray-traced imagery or as animations. For more information, contact Access Technologies, PO Box 202197, Austin, TX 78720, 512/343-9564. Reader service number 500.

Book Smart

FROM THE BASICS on up is what you get from **AmiKit**, a disk-and-book combination sold by Vega Technologies, Inc. The kit is designed to help you use Workbench features, the CLI, and a modem. It includes two public-domain disks filled with productivity and creativity programs, plus a Workbench 1.3 disk. It includes a list of Amiga-related books and magazines. The package retails at $39.95 and covers Workbench 1.3 and the CLI. Direct your questions to Vega Technologies, 3171 Iris St., San Ysidro, CA 92073, 619/477-2024. Reader service number 509.

Facts and Figures

IF TRIG ENGINES, four-function calculators, financial analysis programs, text filter devices, acquired data analysis, graph generation, and binary-hex-decimal support makes your temperature rise, get ready for **I.C.E.** (Integrated Calculation Engine). Through an Intuition-style interface, you can create your own calculators. You get automatic or manual data entry with three user modes, an integral program editor, and print-tape output ability. You can use your I.C.E. creations alone or with other productivity packages such as spreadsheets and databases. I.C.E. retails at $89.95.

After working with numbers, try the **Enigma Device**, a multitasking cryptogram (letter-substitution) puzzle. The game offers over 1000 cryptograms and allows you to create your own puzzles. Beginner's luck, English proverbs, wisdom, and rhymes are examples of categories. You can also use newspapers, magazines or other sources as subject matter to create your own. The game retails for $39.95 and automatically tracks up to 20 players' performance history and statistics. Get more information on either program from King Publishing, 921-32nd Street, Sioux City, IA, 51104, 712/252-4604. Reader service number 510.

Show Me

A PICTURE IS worth a thousand words, says Cape Fear Teleproductions Inc. **Video Graphics Techniques**, a 30-minute videotape, promises to show you how to integrate computer graphics into a variety of video projects. Using examples, the tape guides you through areas such as titling, genlocking and the creation of simple special effects. All graphics on the tape were created using the Amiga. Understanding how and when to use graphics and preproduction planning are stressed. Tips and techniques on selecting fonts, colors, and backgrounds are offered. Video Graphics Techniques is available on VHS format for $41.50 from Cape Fear Teleproductions, 605 Dock St., Wilmington, NC, 28401, 919/762-8028. Reader service number 505.

Move Over Mad Max

IF YOU LIKE high-speed racing, take **Highway Hawks** out for a spin. Race against other cars and negotiate crowded highways. If you can't pass it, obliterate it. You should, however, avoid the pesky assassin and innocent bystanders. You'll need $34.95 to get in the race. Your pit boss is Anco Software, PO Box 292, Burgettstown, PA 15021, 800/992-9198. Reader service number 507.

Within Reach

YOU CAN ACCESS A2000 cards from your A500 or A1000 with a **Phoenix Expansion Chassis**. Two models offer two 100-pin slots; one includes a 12-volt and five-volt DC internal power supply ($253.95) capable of running a hard card and up to eight megabytes of RAM, while the other draws its power through your computer ($179.95). A third model adds a coprocessor slot with bus buffering and arbitration to the power-equipped version (price to be announced). Phoenix Electronics is located at PO Box 156, 314 Court St., Clay Center, KS, 67432, 913/632-2159. Reader service number 504. ■

HORS D'OEUVRES

Hints, tips, and techniques

from your fellow Amiga users.

Write Protection Detection

MY AMIGA LOCKED up one day while I was using Scribble!. I had tried to save a file to a write-protected disk. To prevent this from happening again, I added this line to my startup-sequence:

```
RENAME .INFO AS .INFO
```

This apparently trivial command does nothing if the disk is write-enabled (even the date of the .info is not changed). However, if the disk is write-protected, a requester appears telling you that the disk is write-protected. This gives you fair warning well ahead of time.

Michael Murphy
Wembley Downs, Western Australia

Rocket Ranger Tip

IN CINEMAWARE'S ROCKET Ranger, you have to get through several arcade sequences. However, there are little tricks in all of them that make winning a lot easier. For instance, when attempting to steal a rocket part, you have to fist-fight a Nazi guard. You may have noticed that they fight in flurries. The trick is to keep your guard up. When he drops his guard, throw an uppercut. At the end of his flurry of punches (none of which should land if you keep your guard up), he may finish with a body shot. If he does this, you can immediately follow up with a return body shot of your own. This will at least keep you even with him. Sometimes you can also get him with an uppercut immediately afterwards.

In another part of the game, the ME-109s can be a real pain. However, each formation has a weak spot where you can sit and continually fire without being hit as plane after plane flies blindly into your barrage. Find the weak spot and you can trash the entire formation without taking a hit.

Michael Mitchell
Martinez, GA

Recoverable RAD Disk

IF YOU HAVE extra memory to spare, the RAD DISK (in RAM) can be of great help. Van Name and Catchings did an excellent job of describing this new AmigaDOS 1.3 feature in their column in the December '88 issue of *AmigaWorld* ["Exploring AmigaDOS 1.3," Part V, info.phile, p. 94], but they stated that you can't MOUNT a RAD DISK from your startup-sequence. This is not entirely true. The manual from Commodore that comes with 1.3 describes on pages 5-5 and 5-6 how to set up a copy of the Workbench 1.3 disk in RAD:.

My preference, however, is to have a blank, formatted RAD DISK available upon booting up (unless I have already used the RAD DISK and I am doing a warm reboot; in that case I expect the RAD DISK to remain unchanged). To do this, I adapted Commodore's example. Using a copy of your Workbench 1.3 disk, add the following lines to your startup-sequence immediately above the sixth line (which reads "BindDrivers"):

```
failat 30
assign >NIL: RAD: exists
if warn
   echo "Mounting RAD:"
   mount RAD:
   SYS:System/format <NIL: drive
   RAD: name "RAD DISK"
   noicons quick
endif
```

(Note that the sixth through eighth lines, starting with "SYS" and ending with "quick", should be entered all on one line.)

If you are forced to do a warm reboot, the "if warn. . .endif" construct will prevent RAD: from being remounted and reformatted, and your RAD DISK's contents should remain intact.

The noicons option prevents the trashcan from being created. The "quick" option here saves time. The RAD DISK does not require a full cylinder-by-cylinder format like a magnetic disk.

Jim Donnelly
Honolulu, HI

Sinbad Bailout

IN CINEMAWARE'S SINBAD and the Throne of the Falcon, there is an easy way to get around the many obstacles that are thrown in your path. When you encounter an earthquake, shipwreck, or an enemy, you can avoid them using a little trick. After you are notified that you have encountered an earthquake, or any other obstacle, just click twice on the quit button in the upper left-hand corner of the screen. This will take you to a screen with several options. Click on the box RESUME GAME to continue your quest. You will be able to resume your game without having to face the obstacle.

Phuong Ngo
Long Beach, CA

If you have an idea you'd like to share with our readers, send it to Hors d'oeuvres, Amiga-World *Editorial, 80 Elm St., Peterborough, NH 03458. If your idea gets published, you'll receive an* AmigaWorld *surprise gift.* ■

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HELP KEY

The Great Inoculator stands poised and ready to wipe out the next wave of silicon sickness.

By Louis R. Wallace

WARNING!

A FEW ISSUES back, we reported on the various strains of Amiga viruses and what you can do to defend yourself against them ["Vanquishing the Viruses," Nov. '88, p. 48]. A number of new viruses have appeared since then, and I wanted to let you know about them. There are also some new tools you can use to defend yourself against these invasions, and again it's something you need to know about.

As of this writing (January 1989), three new viruses have started making the rounds. One of them, the IRQ virus, is a totally new beast that has a great deal of destructive potential. The other two seem to be attempts to fight fire with fire, but unfortunately they end up being merely new viruses.

One of these new viruses is called SystemZ. This is a boot-block virus similar to many of the earlier strains. When loaded into memory by booting an infected disk, it lies around waiting for a disk to be inserted. If the disk has a normal boot-block, it copies itself onto the disk, but if it finds that the disk contains another virus on the boot block, it will tell you and ask if you want it to be overwritten. Obviously, the creator of this virus meant it to help prevent the infection of disks by other viruses. Nevertheless, this is a contagious virus that can destroy commercial programs just as easily as the old SCA or Byte Bandit viruses.

Another "anti-virus" virus is called the Pentagon Circle. It acts very much like the SystemZ virus and appears to have been created for the same reason. Again, it is contagious, potentially destructive and should be avoided.

The worse virus to date is the new IRQ virus. This monster does not infect disks like the boot-block style viruses; it attacks specific programs on the disk! Worse yet, it is the first virus so far that attacks hard drives. This virus, and its possible descendants, will no doubt be responsible for some serious trouble to the Amiga community.

The only way to contract this bug is to load an infected program. Once you have, it attaches itself to a vector (the OpenLibrary( ) vector, specifically) and waits for you to use a program that uses this redirected vector. When this happens, it goes to your system disk and reads your Startup-Sequence, looking for the name of the first file you execute. It then tries to attach itself to this program, whatever it might be. If it fails, it then attacks your AmigaDOS DIR (directory) command, which you will no doubt use at some time in the future. It will continue to spread itself this way as long as it is in memory.

Because this IRQ virus can be spread by simply loading an infected program into memory, it is also the first Amiga virus that can be contracted by downloading software from a BBS or commercial network. The only solution is to be on guard and have the proper tools.

Currently, there are two major software defenses against viruses. The first is VirusX, a public-domain "watchdog" program written by Steve Tibbett. VirusX has been the main line of defense for the past year, mostly because Steve keeps upgrading it whenever he finds a new virus. The current version is VirusX 3.1 and is available from user groups, many BBSs, and commercial on-line services such as GENIE, PLink, and Compuserve. So far it protects you against the SCA, Byte Bandit, North Star, Byte Warrior, Revenge, Obelisk, Pentagon Circle, SystemZ and IRQ viruses. You can run it from your Startup-Sequence and it is always present, watching both the Amiga's memory (for the IRQ virus) and any disks you might insert (for boot-block viruses). VirusX is an invaluable program and one I recommend.

When I downloaded VirusX 3.1 from GENIE (in ARCed format), it also had another program called KV (Kill Virus) by Dan James included with it. KV checks executable programs on disk for the IRQ virus. If you suspect you might be infected with it, run KV on the possible carriers and it will find the virus if present. KV can also be used to check entire directories. If you are in the habit of downloading programs, check them with KV before running them. Better safe than sorry.

Also, it's a good idea to be sure of your source when you pick up these anti-virus tools. While most of the sysops on the major on-line networks are quite diligent about checking programs before releasing them, it is possible to get untested software from smaller, private BBSs. You *don't* want to unwittingly contract a virus or trojan horse.

VirusX Offer

As a service to Help Key readers, we have arranged to sell a disk containing VirusX for a nominal fee. To obtain your copy of VirusX, send a check or money order for $5.50 ($5.00 plus $.50 shipping) to VirusX Offer, *AmigaWorld*, 80 Elm Street, Peterborough, NH 03458. All payments must be in U.S. funds. Overseas orders should include $2.00 for postage. Allow three to six weeks for delivery.

UPGRADING THE 2000

Q: *I'm angry! I bought my A2000 less than a year ago, and now Commodore has already re-* ►

leased two new Amiga models (A2000HD and A2500). I thought the whole idea behind the A2000 was to make it the upgradable, standard Amiga. Have all we A2000 owners been given the shaft?

Raymond Taylor
Atlanta, GA

A: No, I don't think so. The A2000HD and A2500 are really just A2000s that have been expanded by the addition of a hard drive, extra memory and a faster CPU. On most computers that would spell trouble for the earlier models, but to upgrade the A2000 to the A2000HD, all you need do is add a hard drive and controller (such as the CBM A2090A). You then have an autobooting A2000HD, and if you need more memory, just stick in a card with a couple of megabytes more.

To complete the upgrade to the A2500, you can add the A2620 Accelerator Card. This is a 14.3MHz 68020 board with a 68881 math coprocessor, 68851 Memory Management Unit and from 2–4MB of 32-bit RAM. This is exactly the same board found in the A2500. In fact, the only real difference between the A2500 and an A2000 with the added boards is the label on the front. And that's the way it should be.

A Matter of Interpretation

Q: *Is the Amiga Basic interpreter, in essence, a compiler? If so, can the interpreted code be intercepted, saved to a file, and later be run as a stand-alone program?*

R. Angus
West Berlin, Germany

A: Amiga Basic is an interpreter and does not compile its programs in any way. The interpreter reads each program statement and analyzes it to see what commands it uses. Then, the interpreter passes any parameters associated with the command to a built-in routine that executes the command. When that Amiga Basic routine finishes, the interpreter examines the next command, passes its parameters to the proper routine, and executes it. The cycle repeats until the program is complete.

In contrast, when a compiler examines a command, it determines which routines will be needed to perform the command's function. If the routines are not contained in a run-time library, the compiler writes the code that will perform the function. When the compiler finishes, the linker attaches the run-time library to the newly created program, where the library becomes an integral part of the executable code. When you execute the program, the computer does not interpret the source code; instead, it uses the newly created machine-language routines.

Graphics Solutions

Q: *In the November '88 issue of* AmigaWorld, *there was a Help Key question about converting Amiga IFF pictures into the GIF format ["Graphic Secrets," p. 108]. I have two PD programs to do just that. They are IFF2GIF by Steve Wilhite and AMGIF by Steve Bennett. I found them on Compuserve.*

John Hallett
Las Vegas, NV

A: Thanks, John. If you need these files, you can search the Compuserve libraries for them, and if you use other online services, you may find them there as well. ■

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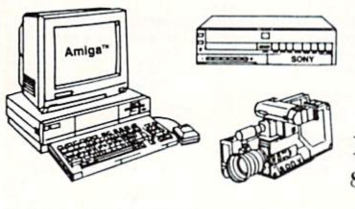
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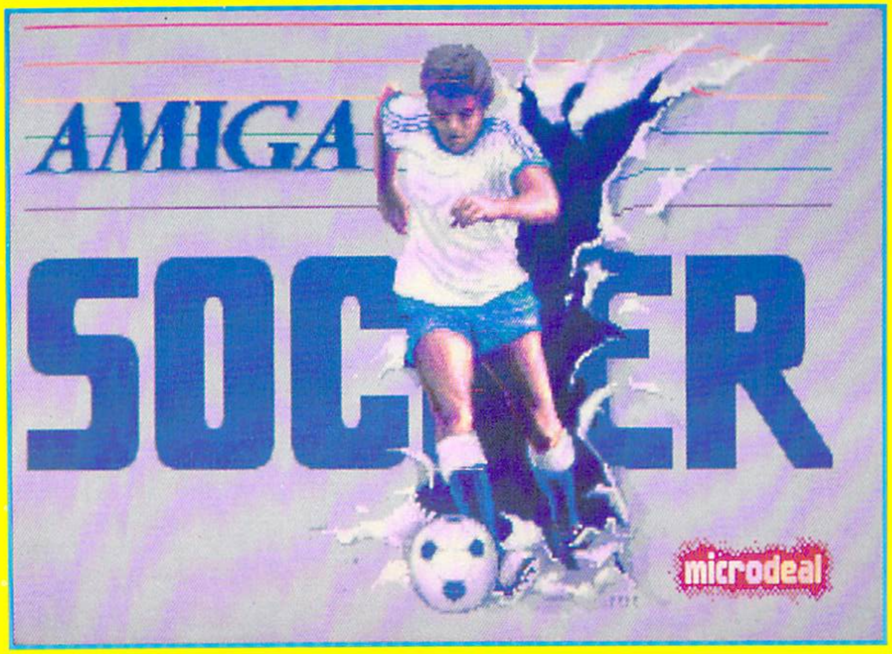
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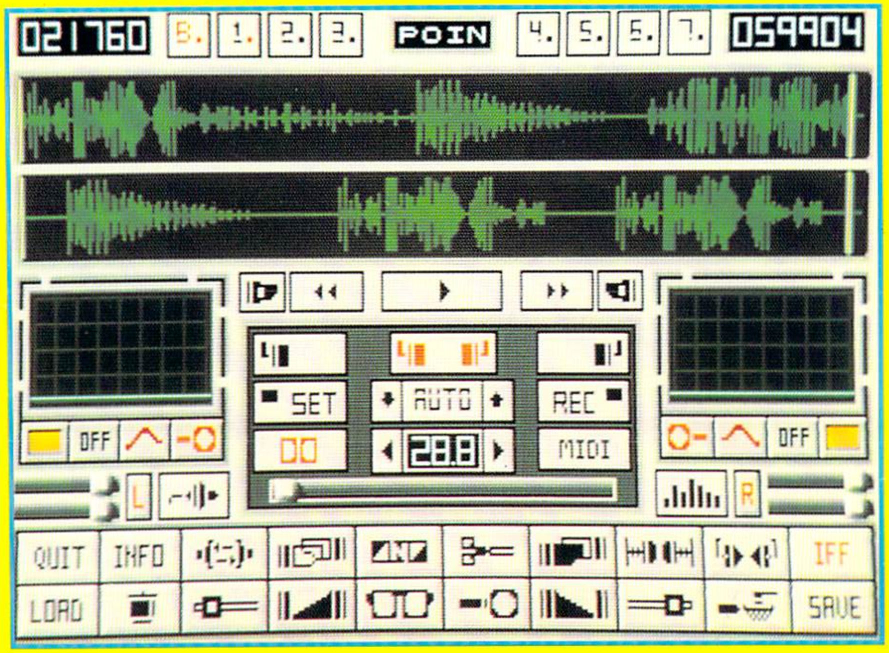
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